

TIE-02306

Introduction to Software Engineering

5 credit units

11-OS-ItSE-2019-v2

Course contents (plan)

1. Course basics, intro
2. Sw Eng in general, overview
3. Requirements
4. Different software systems
5. Basic UML Diagrams ("Class", Use Case, Navigation)
6. Life Cycle models
7. UML diagrams, in more detail
8. Quality and Testing
9. Project work
10. Project management
- 11. Open source, APIs, IPR**
12. Embedded systems
13. Recap

11. Open source, APIs, IPR

- Open Source (OS),
- Open Data
- Big Data
- IoT (Internet of Things)
- API = application programming interface
-
- IPR = intellectual property rights
- licenses
- patents
- contracts (e.g. IT2018)

Current at course (w 47)

- WE10 next week
- continue updating your Trello (kanban) boards = use at your process
- EXAM 2/3 (w 44-46); 29 attend., 53..115 min, diagrams (Dia), zip
- 2nd presentations, Wed 20.11.2019, at 16-18,
- group-to-group feedback at PRP opensa after 2nd presentations
- EXAM 3/3 at weeks 47-49; 12 questions (right/wrong) in 6 sections + volunteer feedback

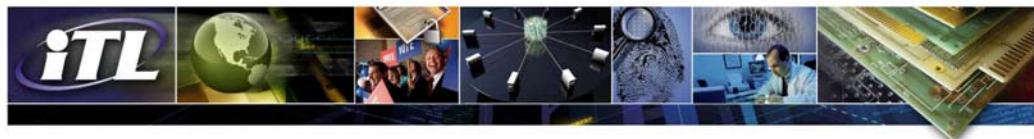
Backlog items with deadline

- | | |
|-----------------------|--|
| • 09.09.2019 at 23:59 | Group forming (Moodle) |
| • 15.09.2019 at 23:59 | Trello creation (Trello) |
| • 13.10.2019 at 23:59 | Phase 1 documentation (Moodle) |
| • 13.10.2019 at 23:59 | Phase 1 presentation slides (PRP-tool) |
| • Week 43 | Phase 1 presentations (Physical realm) |
| • 03.11.2019 at 23:59 | Phase 1 peer feedback (PRP-tool) |
| • 17.11.2019 at 23:59 | Phase 2 documentation (Moodle) |
| • 17.11.2019 at 23:59 | Phase 2 presentation slides (PRP-tool) |
| • Week 47 | Phase 2 presentation (Physical realm) |
| • 01.12.2019 at 23:59 | Phase 2 peer feedback (PRP-tool) |
| • 08.12.2019 at 23:59 | Final delivery of project documentation (Moodle) |
| • 15.12.2019 at 23:59 | Final peer feedback and self assessments (PRP-tool). |

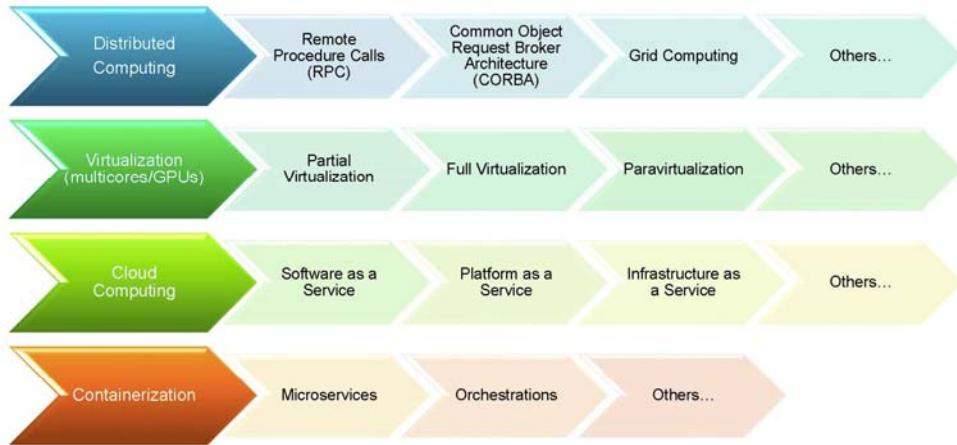
Weekly exercise attendees

	w36 WE1	w37 WE2	w38 WE3	w39 WE4	w40 WE5	w41 WE6	w44 WE7	w45 WE8	w46 WE9	w48 WE10
WED	0	14	9	5	8	9	9	7	7	
THU	21	13	14	17	16	13	6	17	12	

We will continue two Weekly Exercise groups, as long as the number of attendees are reasonable.



What's the Computing Infrastructure Trend?



Open source (OS)

Open source (OS) ("no price")

Open source, The Open Source Definition was originally derived from the Debian Free Software Guidelines (DFSG).

"The license of a Debian component **may not restrict any party from selling or giving away the software** as a component of an aggregate software distribution containing programs from several different sources. The license **may not require a royalty or other fee** for such sale."

"The program **must include source code**, and must allow distribution in source code as well as compiled form."

"The license **must allow modifications and derived works**, and must allow them to be distributed under the same terms as the license of the original software."

"The **GPL, BSD, and Artistic** licenses are examples of licenses that we consider *free*."

"Nearly all open source programs are in fact free."

Third party components = software functions, modules or components made by someone else, either free or commercial.

Free software ("liberty")

Public domain = at last century, free software, either source code or just binary.

Free software is software that can be **freely used, modified, and redistributed** with only one restriction: **any redistributed version of the software must be distributed with the original terms of free use, modification, and distribution (known as copyleft)**.

The definition of free software is stipulated as part of the GNU Project and by the Free Software Foundation. Free software may be packaged and distributed for a fee; the "free" refers to the ability to reuse it, modified or unmodified, as part of another software package. As part of the ability to modify, users of free software may also have access to and study the source code.

The concept of free software is the brainchild of Richard Stallman, head of the GNU Project. The best known example of free software is Linux.

"Free software" means software that respects users' freedom and community. Roughly, it means that **the users have the freedom to run, copy, distribute, study, change and improve the software**. Thus, **"free software" is a matter of liberty, not price**.

Freeware (several definitions)

Freeware is any copyrighted software, application or program that may be freely downloaded, installed, used and shared. Such programs are available for use at no cost to general end users. **Freeware differs from free software, as the latter allows a user to modify source code for republishing or integration with other software.**

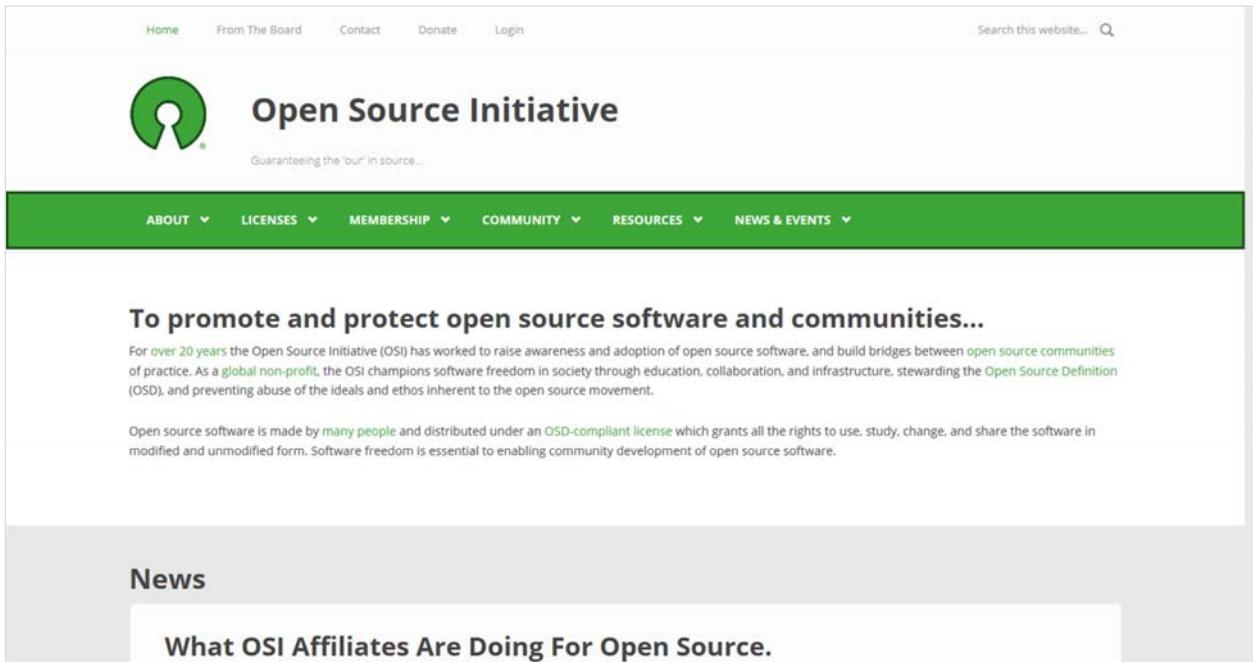
Freeware is computer software that is **made available free of charge, but which is copyrighted by its developer**, who retains the rights to control its distribution, modify it and sell it in the future. It is typically distributed without its *source code*, thus preventing modification by its users.

Freeware is software that is free to use. Unlike commercial software, it does not require any payment or licensing fee. It is similar to shareware, but will not eventually ask you for payment to continue using the software. You can legally download and use freeware for as long as you want without having to pay for it.

shareware

Shareware (also known as trialware or demoware) — Trial software that you can use free of charge for a limited time (usually 30 or 60 days). After that, you're expected to pay to continue using it.

www.opensource.org



The screenshot shows the homepage of the Open Source Initiative (OSI) website. At the top, there is a navigation bar with links for Home, From The Board, Contact, Donate, and Login. To the right of the navigation bar is a search bar labeled "Search this website..." with a magnifying glass icon. Below the navigation bar, there is a large green header with the text "Open Source Initiative" and a green circular logo featuring a white keyhole icon. Below the green header, the text "Guaranteeing the 'our' in source..." is visible. The main content area has a white background and features a section titled "To promote and protect open source software and communities...". It includes a paragraph about the OSI's history and mission, mentioning its work over 20 years to raise awareness and build bridges between open source communities. It also discusses its role as a global non-profit championing software freedom. Below this, there is a smaller paragraph about open source software being made by many people and distributed under OSD-compliant licenses. At the bottom of the page, there is a "News" section with a heading "What OSI Affiliates Are Doing For Open Source.".

The Open Source Definition

Open source doesn't just mean access to the source code.

The distribution terms of open-source software must comply with the following criteria:

- 1. Free Redistribution**
- 2. Source Code**
- 3. Derived Works**
- 4. Integrity of The Author's Source Code**
- 5. No Discrimination Against Persons or Groups**
- 6. No Discrimination Against Fields of Endeavor**
- 7. Distribution of License**
- 8. License Must Not Be Specific to a Product**
- 9. License Must Not Restrict Other Software**
- 10. License Must Be Technology-Neutral.**

[<https://opensource.org/osd>]



FOSS (free and open source software)

Free and open-source software (FOSS) allows users and programmers to edit, modify or reuse the software's source code. This gives developers the opportunity to improve program functionality by modifying it.

The term "free" indicates that the software does not have constraints on copyrights. The term "open source" indicates the software is in its project form, enabling easy software development from expert developers collaborating worldwide without any need for reverse engineering.

Free and open-source software may also be referred to as **free/libre open-source software (FLOSS)** or free/open-source software (F/OSS).

[www.techopedia.com/]

FLOSS = FOSS

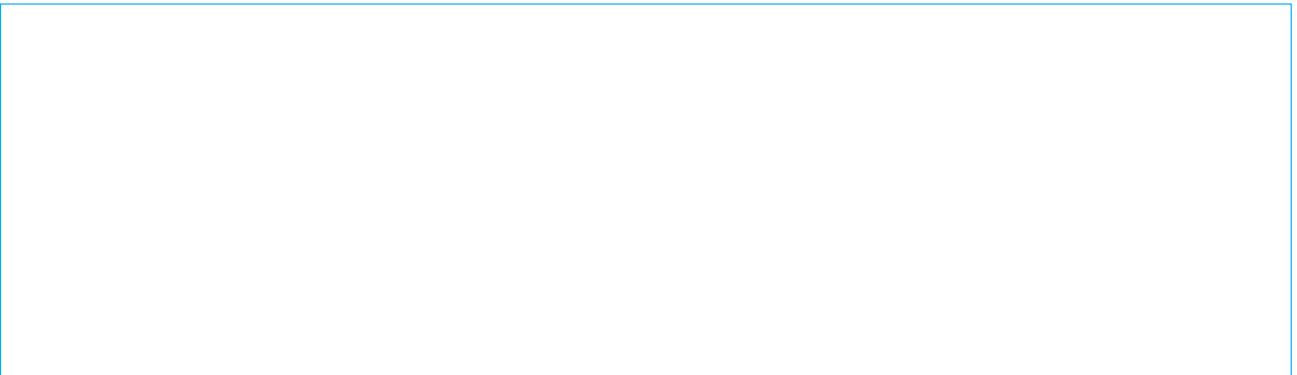
by Richard Stallman

The two political camps in the free software community are the **free software movement** and **open source**. The free software movement is a campaign for computer users' freedom; we say that a nonfree program is an injustice to its users. The open source camp declines to see the issue as a matter of justice to the users, and bases its arguments on practical benefits only.

To emphasize that "**free software**" refers to freedom and not to price, we sometimes write or say "free (libre) software," adding the French or Spanish word that means free in the sense of freedom. In some contexts, it works to use just "libre software."

A researcher studying practices and methods used by developers in the free software community decided that these questions were independent of the developers' political views, so he used the term "**FLOSS**," meaning "**Free/Libre and Open Source Software**", to explicitly avoid a preference between the two political camps. If you wish to be neutral, this is a good way to do it, since this makes the names of the two camps equally prominent.

Others use the term "**FOSS**," which stands for "**Free and Open Source Software**". This is meant to mean the same thing as "FLOSS," but it is less clear, since it fails to explain that "free" refers to *freedom*.



2.1.1 Essential criteria for Free and Open Source Software

Free and Open Source software licences must comply with four specific unrestricted criteria on the use to be made of the software, which have to be granted by the licensor to any licensee:

Freedom to run the program

Allow the licensee to run the program, for any purpose, therefore with no restrictions.

Freedom to study and change

Allow the licensee to study how the program works and modify it according to expectations or in order to answer the needs that the software is supposed to meet, with the precondition that access to the source code is given.

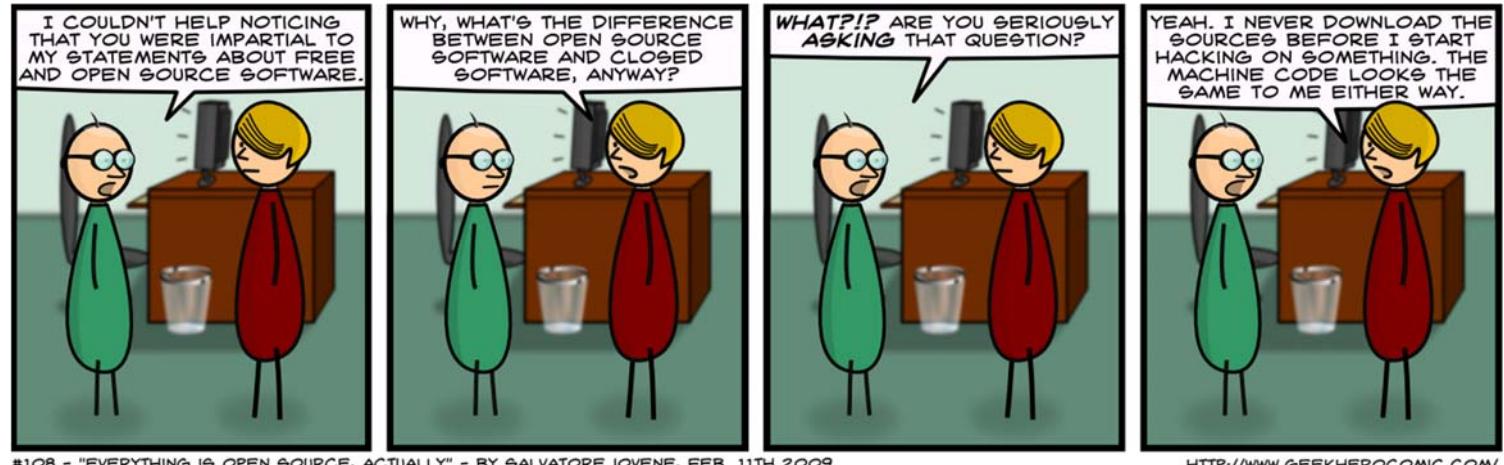
Freedom to redistribute

Allow the licensee to redistribute unmodified copies, without restrictions.

Freedom to distribute

Allow the licensee to distribute modified versions (known as derivative or larger works).





www.coss.fi

About COSS

- [Projects](#)
- [Membership](#)
- [List of Members](#)
- [Open Source](#)
- [Contact Us](#)

The evolution of open source can be divided into three phases:

- Free software
- Open source
- Commercial open source.

About COSS

COSS - the Finnish Centre for Open Systems and Solutions is a non-profit association that promotes open source, open data, open standards and APIs. Internationally COSS is known as one of the oldest and most active centres for openness.

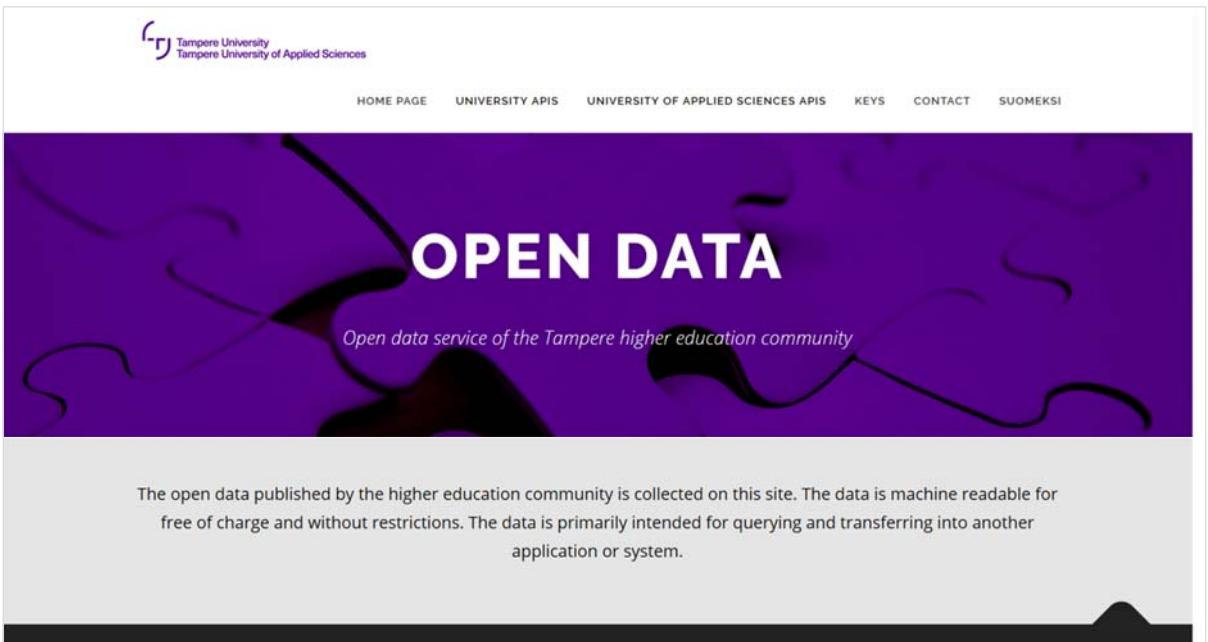
COSS operation is based on far-reaching cooperation, communication and creating networks.

The objective of COSS is to strengthen the competitiveness of Finland's software intensive industries, promote the growth and internationalization of open source businesses and reinforce the development of the Finnish information society with the support of open technologies and communities.

[Privacy - Terms](#)

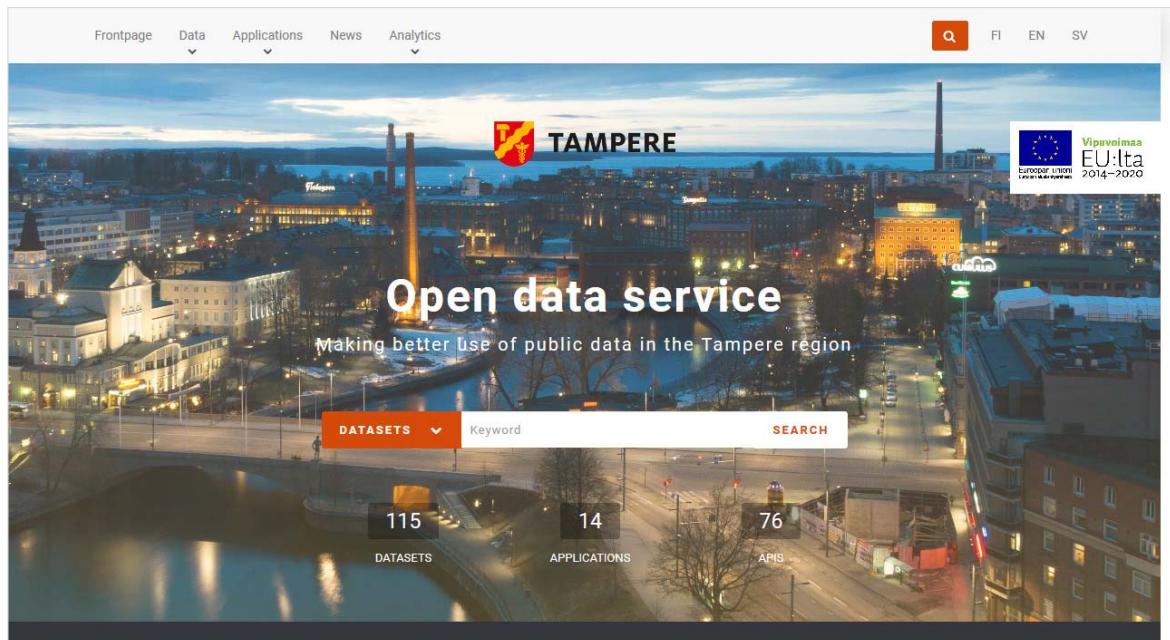
Open data

opendata.tuni.fi

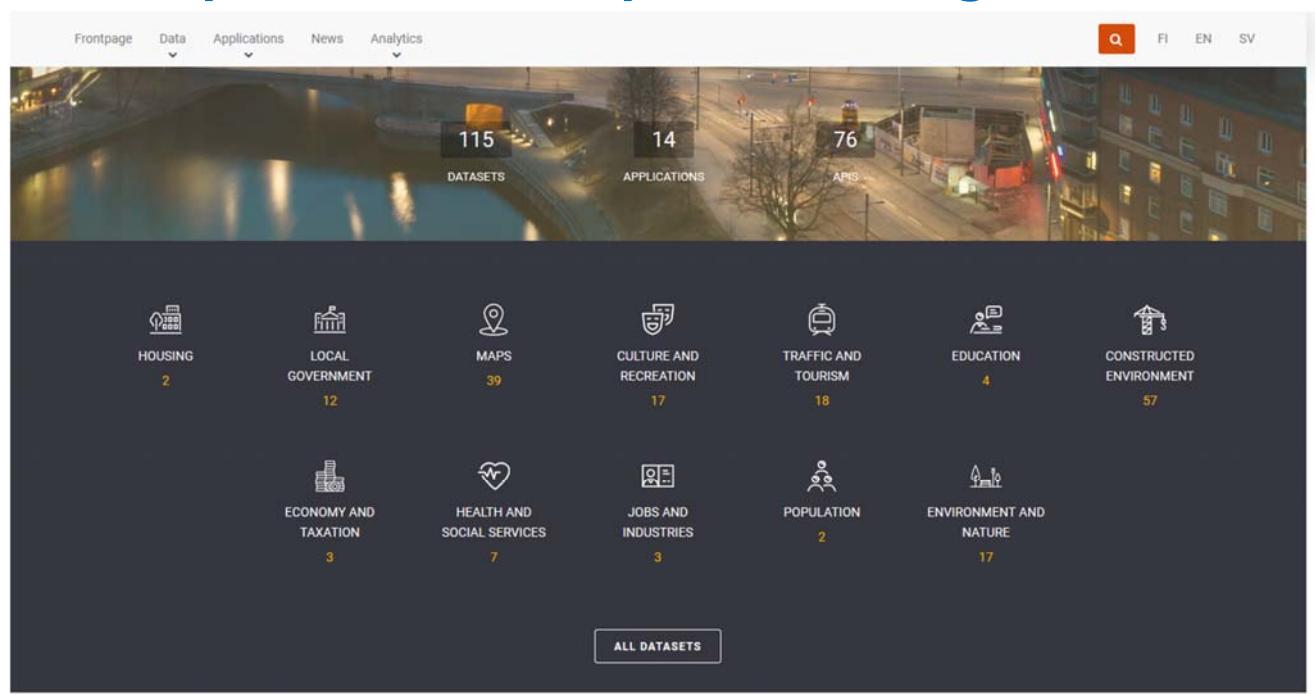


The open data published by the higher education community is collected on this site. The data is machine readable for free of charge and without restrictions. The data is primarily intended for querying and transferring into another application or system.

data.tampere.fi/en_gb/



https://data.tampere.fi/en_gb/



Tampere

City of Tampere open data

City of Tampere upkeeps catalog of open data sources: <http://data.tampere.fi/>

Tampere Reittiopas API

See: [Tampere Reittiopas API](#)

Tampere Public Transport SIRI Interface (Realtime)

See: [Tampere Public Transport SIRI Interface \(Realtime\)](#)

Tampere Public Transport SIRI Interface (Static)

See: [Tampere Public Transport SIRI Interface \(Static\)](#)

Tampere Public Transport GTFS feed

See: [Tampere Public Transport GTFS feed](#)

Other

European catalog on traffic related open data

See: <http://data.opencities.net/group/transport>



Data sources in ITS Factory

Data source	Source	Documentation link
GTFS Dump files	Tampereen joukkoliikenne	http://wiki.itsfactory.fi/index.php/Tampere_Public_Transport_GTFS_feed What is GTFS? https://developers.google.com/transit/gtfs/
Journeys API	Tampereen joukkoliikenne	Documentation Link
SIRI JSON	Tampereen joukkoliikenne	Documentation Link
SIRI XML	Tampereen joukkoliikenne	Documentation Link

[wiki.itsfactory.fi]

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Timetables and routes Tickets and fares Information More ▾

[Login](#)

Open data

Open data in HSL

Helsinki Regional Transport Authority (HSL) offers open data both as interface services and data packages. Below we've listed all available data sets and APIs.

Journey Planner APIs

The Journey Planner ([reittiopas.fi](#)) APIs offer data regarding routing, geocoding, map data and vehicle locations through several APIs...

- Routing API, Itinerary- and timetable-queries via either a GraphQL-API or a REST-API
- Geocoding API, Pelias REST-interface
- Map API, HSL's background map as a TMS-service ([Tile Map Service](#)) and a number of public transport related points of interest (eg. ticket vending points, city bike stations & park and ride sites) as Mapbox vectortile-services.
- Realtime API, GTFS-RT & MQTT-feeds

Further information : [digitransit.fi](#)

The public transport network data is updated daily from HSL's public transport register to the journey planner APIs (see below). The OpenStreetMap data is also updated daily to the journey planner for routing graph, geocoding and background map purposes. Due to different cache-settings, the changes in the background map become visible to the users in about one week's time.

Public transport network & timetables (GTFS)

<https://www.hsl.fi/en/opendata>

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Open Data

- [Terms of use](#)
- [Materials](#)
- [Digiroad](#)
- [Digitraffic](#)
- [View and download services](#)

Open data

Finnish Transport Infrastructure Agency supports transport and in Finland by offering it's data openly for the public.



Open data programme in the Finnish Transport Infrastructure Agency

vayla.fi/web/en/open-data

Statistics Finland

- [HOME](#)
- [STATISTICS](#)
- [METADATA](#)
- [DATA COLLECTIONS](#)
- [PRODUCTS AND SERVICES](#)
- [NEWS](#)
- [STATISTICS FINLAND](#)
- [Suomeksi](#)
- [På svenska](#)

Tilastokeskus | Statistikcentralen

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Search the site

Open data

Statistics Finland provides open statistical data for decision-making and research. Open statistical data are available on various topics for the entire country, by municipality, postal code area and map grid. We also offer international statistical data, an example of which is Eurostat's main tables.

Statistics Finland uses the open data licence – CC BY 4.0 licence. Data can be used freely in every possible way provided that the source is mentioned.

Open interfaces

Open database data

You can search for statistical data from free-of-charge databases in the PX-Web API interface in the following formats: XLSX, XML, JSON, JSON-stat, CSV, etc. You can find collected basic data on Statistics Finland's open database data and instructions and links to API interfaces on the Open database data page. You can find further information about the interface in the [PxWebApi instructions \(PDF\)](#).

Geographic data

You can take open geographic data into use from the interface service for viewing (WMS) or transfer (WFS). Statistics Finland's open geographic data are part of the national geographic information interface and they have also been published in the national geographic information portal [Paikkatietoikunta](#).

Classifications

You find the classifications published by Statistics Finland with metadata on the following pages:

- [Information about statistical classifications and the statistical classification API](#)
- [Statistical Classification API](#)

www.stat.fi/org/avoindata/index_en.html

opendefinition.org

Open Definition | The Definition | Conformant Licenses | Participate | News | 

The Open Definition

The [Open Definition](#) sets out principles that define "openness" in relation to data and content.

It makes **precise** the meaning of "open" in the terms "**open data**" and "**open content**" and thereby ensures **quality** and encourages **compatibility** between different pools of open material.

It can be summed up in the statement that:

"Open means anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness)."

Put most succinctly:

"Open data and content can be freely used, modified, and shared by anyone for any purpose"

[Read the full Open Definition »](#)

Open Definition is a project of Open Knowledge Foundation - Source Code

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licenses

licenses

Licenses that are "popular and widely-used or with strong communities"

The below list is based on publicly available statistics.

- Apache License 2.0 (Apache-2.0)
- 3-clause BSD license (BSD-3-Clause)
- 2-clause BSD license (BSD-2-Clause)
- GNU General Public License (GPL)
- GNU Lesser General Public License (LGPL)
- MIT license (MIT)
- Mozilla Public License 2.0 (MPL-2.0)
- Common Development and Distribution License 1.0 (CDDL-1.0)
- Eclipse Public License 2.0 (EPL-2.0).

Also e.g.:

- European Union Public License (EUPL-1.2).

<https://opensource.guide/>

About

Contribute

English

Open Source Guides are a collection of resources for individuals, communities, and companies who want to learn how to run and contribute to an open source project.

Open Source Guides

Open source software is made by people just like you. Learn how to launch and grow your project.



How to Contribute to Open Source

Want to contribute to open source? A guide to making open source contributions, for first-timers and for veterans.



Starting an Open Source Project

Learn more about the world of open source and get ready to launch your own project.

We classify a license according to certain key criteria:

- Whether it qualifies as a free software license.
- Whether it is a copyleft license.
- Whether it is compatible with the GNU GPL. Unless otherwise specified, compatible licenses are compatible with both GPLv2 and GPLv3.
- Whether it causes any particular practical problems.

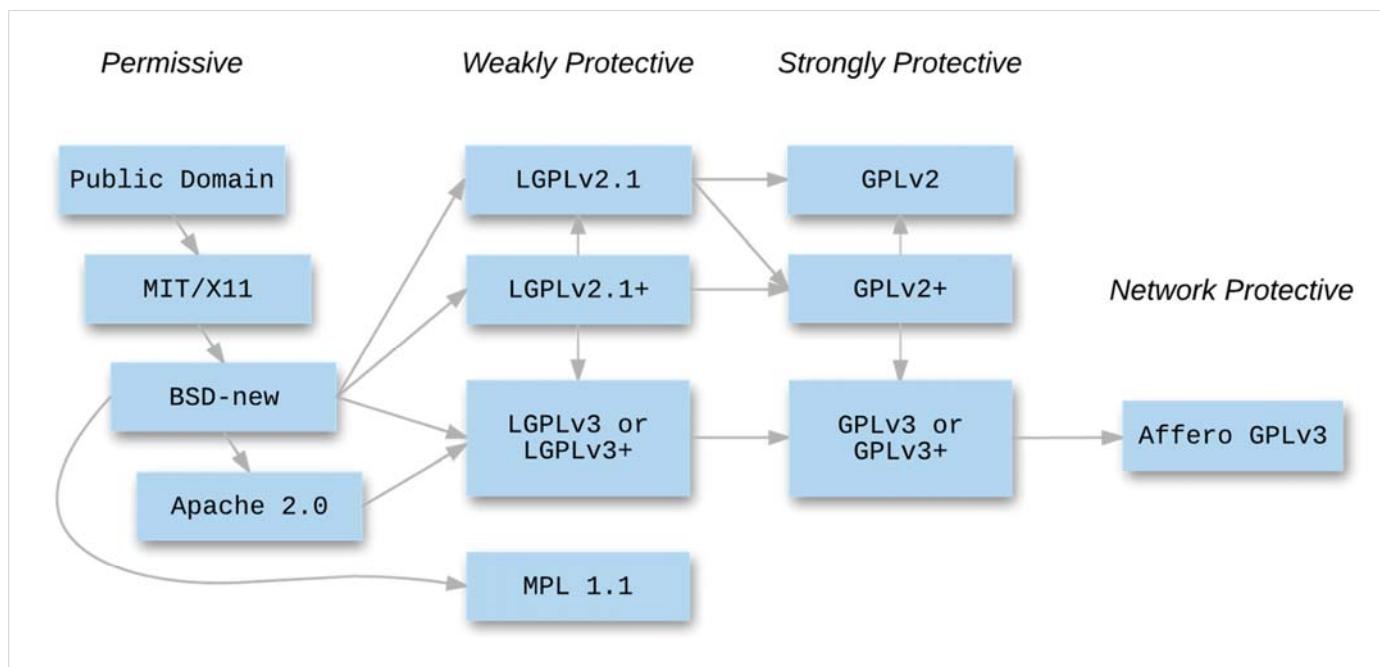
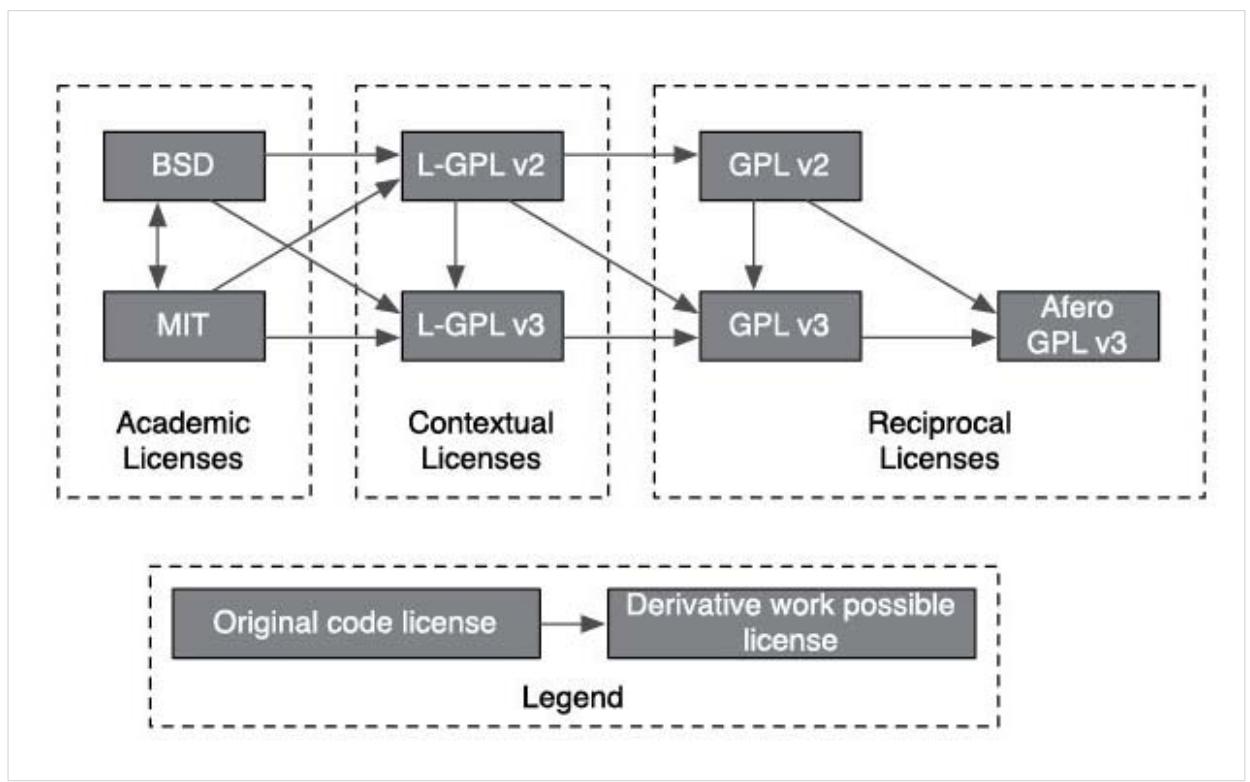
Richard Stallman: When we call software “free,” we mean that it respects the users’ essential freedoms: the freedom to run it, to study and change it, and to redistribute copies with or without changes. **This is a matter of freedom, not price, so think of “free speech,” not “free beer.”**

Copyleft is a general method for making a program (or other work) free (in the sense of freedom, not “zero price”), and requiring all modified and extended versions of the program to be free as well.

license web pages

<https://choosealicense.com/licenses/>

<https://medium.com/shakuro/software-licenses-explained-77f4f18ebef1>

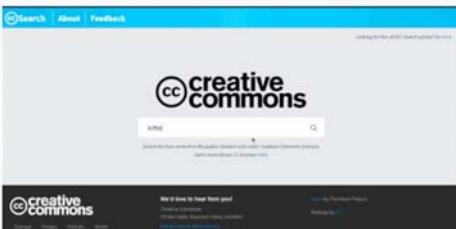


another viewpoint

Examples of software licenses

- **Single-user license** - The software is licensed for a single user and often a single computer.
- **Multi-user license** - This license allows you to install a program onto multiple computers used by multiple users. Typically this may be a set number of users. For example, a five user multi-user license allows up to five people to use the program.
- **Site license** - A program can be installed on an unlimited amount of computers, as long as they're at the location of the site license. Site licenses are usually for schools and businesses.
- Site licenses may be "floating licenses", e.g. at most 20 parallel users at a time.
- University "academic licenses" are usually just cheap price licenses.

<https://creativecommons.org/>



The screenshot shows the Creative Commons homepage. At the top, there's a red header bar with the Creative Commons logo and links for "Search for CC Images", "Global Network", "Newsletters", "Store", "Contact", and social media icons. Below the header, there's a green "Donate Now" button. The main content area features a large orange banner with the text "Help us build a vibrant, collaborative global commons". To the right of this banner is a "Discover the new CC Search" section, which includes a search bar and a "Start searching" button. The Creative Commons logo is also present in this section. On the far right, there's a yellow sidebar.

Creative Commons is a nonprofit organization dedicated to building a globally-accessible public commons of knowledge and culture. We make it easier for people to share their creative and academic work, as well as to access and build upon the work of others. By helping people and organizations share knowledge and creativity, we aim to build a more equitable, accessible, and innovative world.

Big data

Big data

If you think whether it is big data or not, it is.

big data [ITU-T Y.3600]: A paradigm for **enabling the collection, storage, management, analysis and visualization**, potentially under real-time constraints, **of extensive datasets** with heterogeneous characteristics.

NOTE – Examples of datasets characteristics include high-volume, high-velocity, high-variety, etc.

Big Data

Big Data is characterized by

- a collection of huge data sets (**Volume**),
- generated very rapidly (**Velocity**) and
- with a great diversity of data types (**Variety**).

Because of the massive amount of data and the variety of its sources, another characteristic of Big Data is

- the inherent error, noise and induced bias of erratic data (**Veracity**).

The original three Vs (Volume, Velocity and Variety) were introduced in 2001 by Doug Laney from Metagroup.

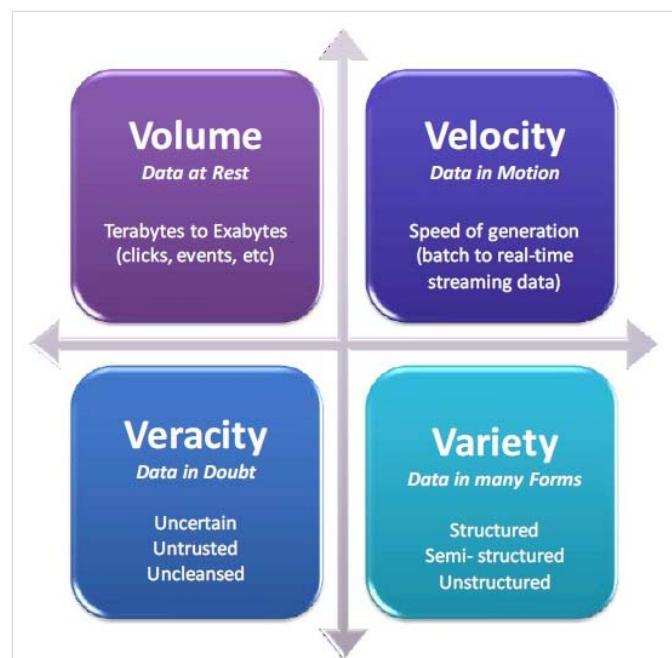


Figure 1 The four Vs of Big Data

Big Data in business and science

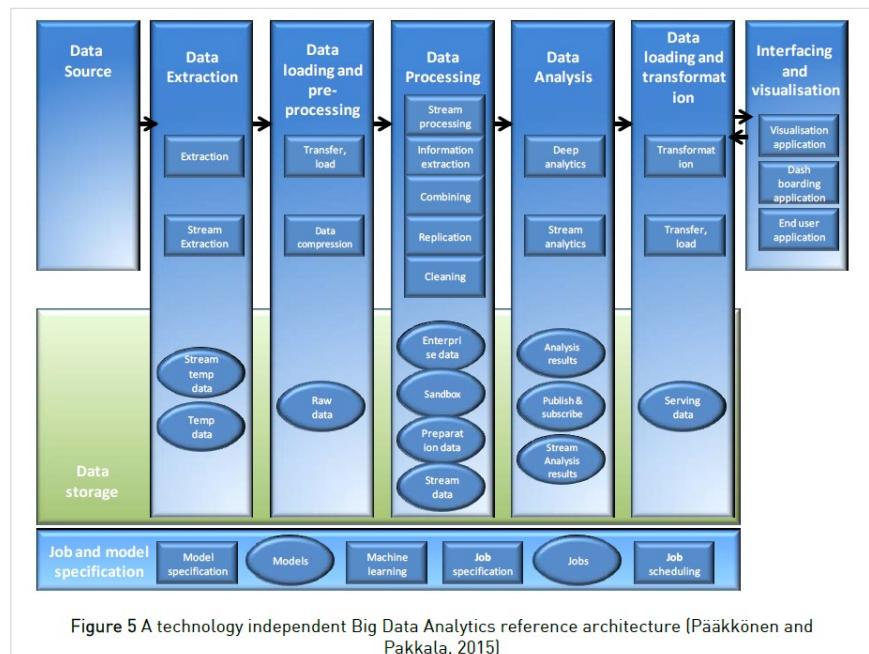
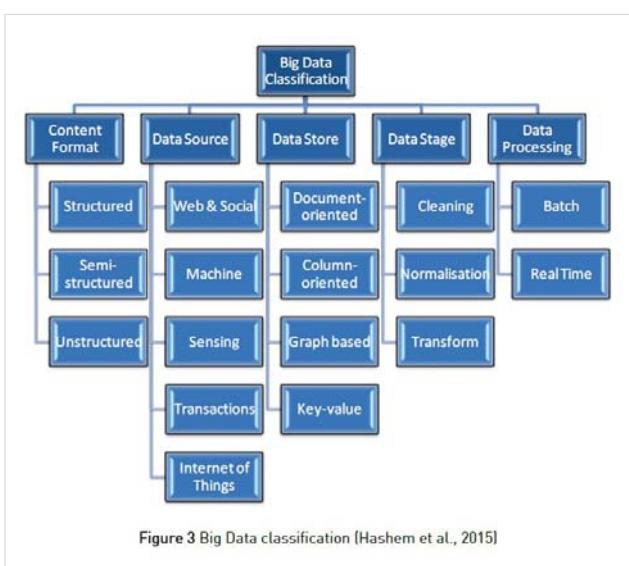
Examples show the massiveness of the amount of data generated every day in business:

- In 1 second: more than 2,100 Skype calls; 700 Instagram photos uploaded; 34,500 GB of Internet traffic; 53,900 Google searches; 121,400 YouTube videos viewed.
- 300 hours of video were uploaded to YouTube every minute (March 2015).
- Twitter serves around 650 million active users, who produce 9100 tweets every second.
- Facebook creates 10 terabytes (10×10^{12} bytes) data every day, and Google produces 24 terabytes of data every day just from its search operations (Chang et al., 2014).

Each day 2.5 exabytes (2.5×10^{18} bytes) is created, so that 90% of the data in the world today has been created in the last two years alone.

And in scientific research:

- CERN's Data Centre processes about one petabyte (10^{15} bytes) of data every day - the equivalent of around 210,000 DVDs. Its Large Hadron Collider, the largest particle accelerator, generates 40 terabytes per second.
- 32 petabytes of climate observations and simulations are conserved on the discovery supercomputing cluster in the NASA Center for Climate Simulation (NCCS) (Chen and Zhang, 2014).
- The Large Synoptic Survey Telescope (LSST) will record 30 exabytes (30×10^{18} bytes) of image data in a single day (Chen and Zhang, 2014).



Big data challenges [Datamation, 2017]

- Dealing with data growth (storing)
- Generating insights in a timely manner
- Recruiting and retaining big data talent
- Integrating disparate data sources
- Validating data
- Securing big data
- Organizational resistance.

For example, USAF handles 92 TB of weather data every day in 2019.

Benefits of big data

Big data technologies can provide many benefits such as data accessibility, productivity of business processes, and cost reduction to private via public sector.

Big data technology increases data accessibility by:

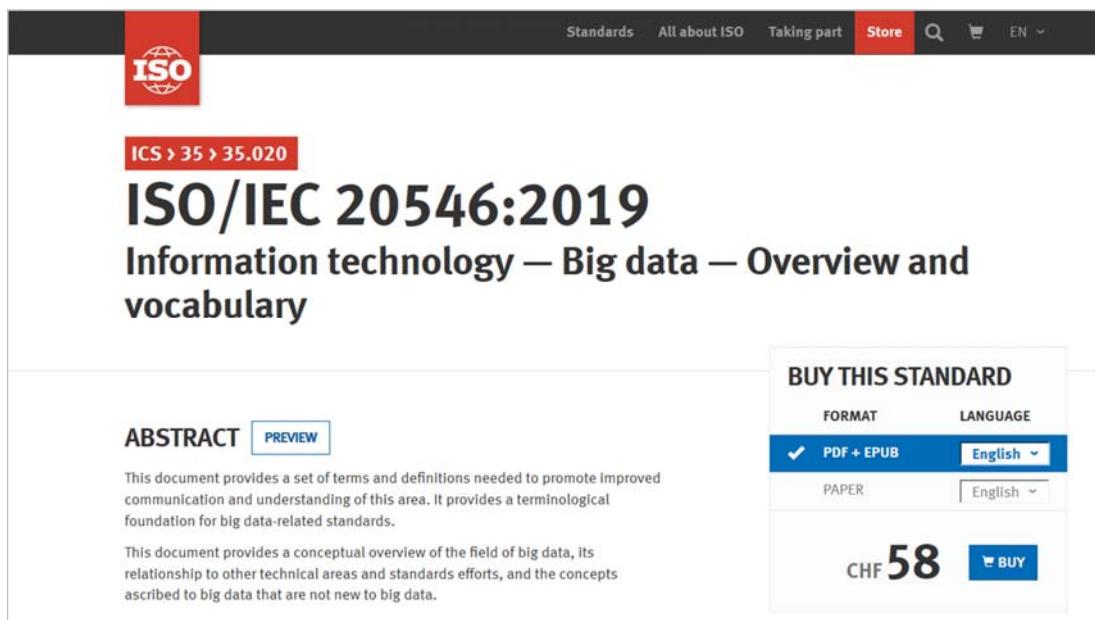
- Unlocking significant value by making information transparent;
- Creating and storing transactional data in digital form;
- Reducing time for finding/accessing the correct data.

Big data technology improves productivity by:

- Real-time monitoring and forecasting of events that impact either business performance or operations;
- Timely insights from the vast amount of data;
- Identifying significant information that can improve decision quality or minimize risks;
- Creating new service models using big data analytics.

Big data technology reduces cost by:

- Scale-out of data storage;
- Identifying and reducing inefficiencies.



The page shows the ISO logo at the top left. Below it is the ICS code 'ICS > 35 > 35.020'. The main title is 'ISO/IEC 20546:2019' followed by the subtitle 'Information technology – Big data – Overview and vocabulary'. On the right, there's a 'BUY THIS STANDARD' section with options for 'FORMAT' (PDF + EPUB selected, PAPER available) and 'LANGUAGE' (English selected, French available). The price is listed as CHF 58 with a 'BUY' button.

Big data

We live in a data-rich world, in which masses of data, known as big data, are generated every day.

An online search or booking, a credit card purchase, an ID scan, a grocery shopping list, social media post, medical record, health monitor, all contain data which can be gathered and analyzed to gain useful insights and improve products and services.

Artificial intelligence (AI) technologies, including algorithms and machine learning are able to make sense of big data in real time. These technologies are evolving rapidly and being used in a growing number of industries, from financial and healthcare to smart manufacturing, intelligent transport systems and self-driving vehicles, as decisions that were once made by human experience are gradually be made by machine analysis of huge amounts of big data.

<https://blog.iec.ch/2019/04/the-need-for-big-data-standards/>

NIST Big Data interoperability Framework (NBDIF)

V3.0 Final Version

<p>Documents</p> <ul style="list-style-type: none"> NBDIF V3 Final NBDIF V2 Final NBDIF V1 Final Docs Repository Use Cases Listing Upload Document <hr/> <p>Registration</p> <ul style="list-style-type: none"> New User Update Profile <hr/> <p>Points of Contact</p> <table border="0"> <tr> <td>Wo Chang</td> </tr> <tr> <td>NIST / ITL</td> </tr> <tr> <td>Digital Data Advisor</td> </tr> <tr> <td>James St Pierre</td> </tr> <tr> <td>NIST / ITL</td> </tr> <tr> <td>Deputy Director</td> </tr> </table>	Wo Chang	NIST / ITL	Digital Data Advisor	James St Pierre	NIST / ITL	Deputy Director	<p>NIST Big Data Definitions & Taxonomies Subgroup</p> <ol style="list-style-type: none"> 1. NIST SP 1500-1r2 -- Volume 1: Definitions 2. NIST SP 1500-2r2 -- Volume 2: Taxonomies (** Available soon **) <p>NIST Big Data Use Case & Requirements Subgroup</p> <ol style="list-style-type: none"> 3. NIST SP 1500-3r2 -- Volume 3: Use Case & Requirements <p>NIST Big Data Security & Privacy Subgroup</p> <ol style="list-style-type: none"> 4. NIST SP 1500-4r2 -- Volume 4: Security and Privacy <p>NIST Big Data Reference Architecture Subgroup</p> <ol style="list-style-type: none"> 5. NIST SP 1500-5 -- Volume 5: Architectures White Paper Survey 6. NIST SP 1500-6r2 -- Volume 6: Reference Architecture <p>NIST Big Data Technology Roadmap Subgroup</p> <ol style="list-style-type: none"> 7. NIST SP 1500-7r2 -- Volume 7: Standards Roadmap <p>Two New Volumes</p> <ol style="list-style-type: none"> 8. NIST SP 1500-9r1 -- Volume 8: Reference Architecture Interface 9. NIST SP 1500-10r1 -- Volume 9: Modernization and Adoption 	<p>Useful References</p> <ul style="list-style-type: none"> ■ IEEE NBD-PWG Workshop, October 27, 2014 ■ 1st NIST Big Data Workshop, NIST, September 30, 2013 ■ National Privacy Research Strategy, June 24, 2016 ■ The Federal Big Data Research and Development Strategic Plan, May 19, 2016 ■ Interim Progress Report on Big Data: Seizing Opportunities, Preserving Values, February, 2015 ■ PCAST Report on Big Data and Privacy: A Technological Perspective, May, 2014 ■ Big Data: Seizing Opportunities
Wo Chang								
NIST / ITL								
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James St Pierre								
NIST / ITL								
Deputy Director								



BIG DATA EUROPE
Empowering Communities with Data Technologies

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SOFTWARE & COMMUNITIES FOR
ADDRESSING EUROPE'S SOCIETAL CHALLENGES

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Internet of Things (IoT)

IoT

Internet of Things, IoT, (**FI: esineiden internet**)

"The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the **ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.**"

—An unnecessarily technical explanation of IoT

In the Internet of Things, all the things that are being connected to the internet can be put into three categories:

- Things that collect information and then send it.
- Things that receive information and then act on it.
- Things that do both.

[www.iotforall.com]

ISO/IEC 20924:2018
Information technology – Internet of Things (IoT) – Vocabulary

The electronic version of this International Standard can be downloaded from the ISO/IEC Information Technology Task Force (ITTF) web site.

ABSTRACT [PREVIEW](#)

ISO/IEC 20924:2018(E) provides a definition of Internet of Things along with a set of terms and definitions forming a terminology foundation for the Internet of Things.

BUY THIS STANDARD

FORMAT	LANGUAGE
<input checked="" type="checkbox"/> PDF	English ▼
PAPER	English ▼

CHF 58 [BUY](#)

ISO/IEC TR 22417:2017
Information technology – Internet of things (IoT) use cases

ISO/IEC TR 22417:2017 This Technical report identifies IoT scenarios and use cases based on real-world applications and requirements. The use cases provide a practical context for considerations on interoperability and standards based on user experience. They also clarify where existing standards can be applied and highlight where standardization work is needed.

ABSTRACT [PREVIEW](#)

ISO/IEC TR 22417:2017 This Technical report identifies IoT scenarios and use cases based on real-world applications and requirements. The use cases provide a practical context for considerations on interoperability and standards based on user experience. They also clarify where existing standards can be applied and highlight where standardization work is needed.

GENERAL INFORMATION [▼](#)

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BUY THIS STANDARD

FORMAT	LANGUAGE
<input checked="" type="checkbox"/> PDF	English ▼
PAPER	English ▼

CHF 198 [BUY](#)

ISO/IEC 21823-1:2019
Internet of things (IoT) – Interoperability for internet of things systems – Part 1: Framework

ABSTRACT [PREVIEW](#)

ISO/IEC 21823-1:2019(E) provides an overview of interoperability as it applies to IoT systems and a framework for interoperability for IoT systems. This document enables IoT systems to be built in such a way that the entities of the IoT system are able to exchange information and mutually use the information in an efficient way. This document enables peer-to-peer interoperability between separate IoT systems. This document provides a common understanding of interoperability as it applies to IoT systems and the various entities within them.

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FORMAT	LANGUAGE
<input checked="" type="checkbox"/> PDF	English ▼
PAPER	English ▼

CHF 118 [BUY](#)

ISO/IEC 30141:2018
Internet of Things (IoT) – Reference Architecture

GENERAL INFORMATION [▼](#)

Status : Published Publication date : 2018-08

Edition : 1 Number of pages : 77

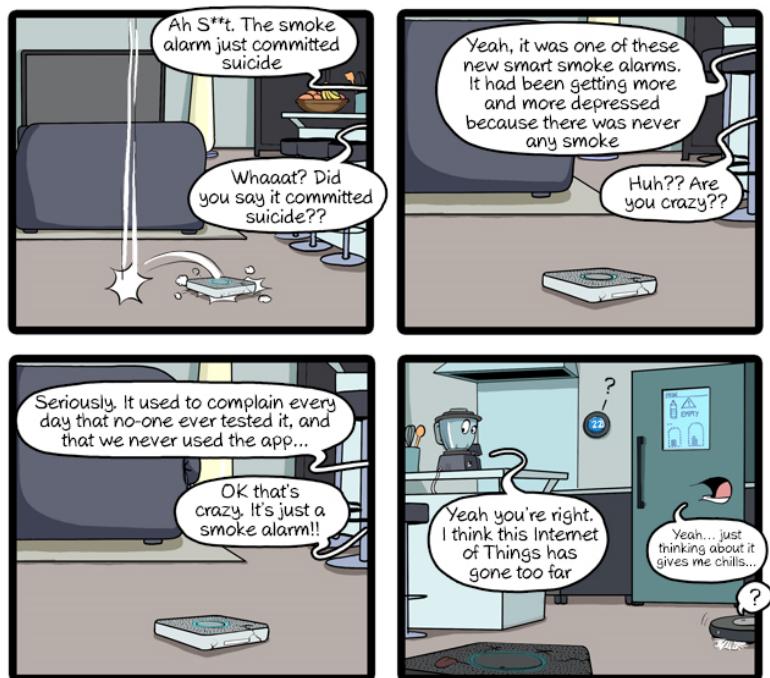
Technical Committee : ISO/IEC JTC 1/SC 41 Internet of Things and related technologies

ICS : 35.020 Information technology (IT) in general

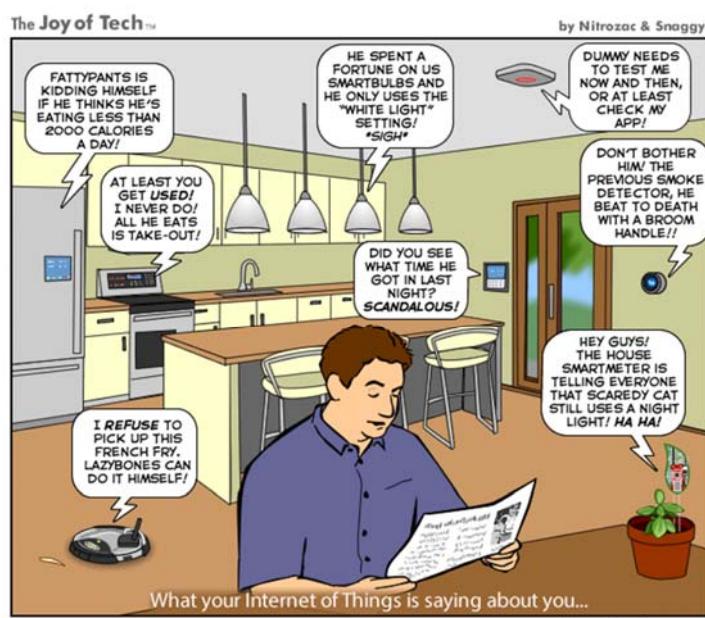
BUY THIS STANDARD

FORMAT	LANGUAGE
<input checked="" type="checkbox"/> PDF	English ▼
PAPER	English ▼

CHF 198 [BUY](#)



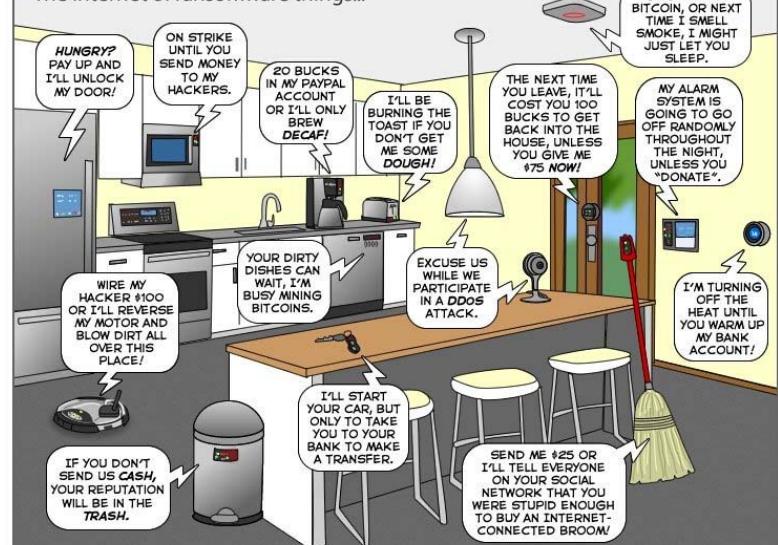
CommitStrip.com



joyoftech.com

The Joy of Tech™ by Nitrozac & Snaggy

The Internet of ransomware things...



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www.patreon/joyoftech

joyoftech.com

API (Application programming interface)

Example:

Tampere traffic lights API

Tampere City provides traffic light data interface.
updated 20.12.2016

Basic Information

- Data format: REST/JSON
Standard: Traffic volume only [Datex2](#)
Availability: Available
Maintainance: Tampere
City/Dynniq/Infotripla Oy
Licence: Tampere City Open Data
License/ITS Factory

Data scope

- Tampere City street network

Data contents

- Traffic volume, queue, wait time,

Access constraints

- Use is free of charge.
- Distribution and re-use of the data is allowed.
- only server to server access is allowed

API access

- [User documentation](#)

Meta Data files

- [trafficVolume.csv](#)
- [congestion.csv](#)
- [waitTime.csv](#)
- [Interserction images \(folder\)](#)
- [Tampere Traffic Lights Geodata](#)

More information

- Help and support:

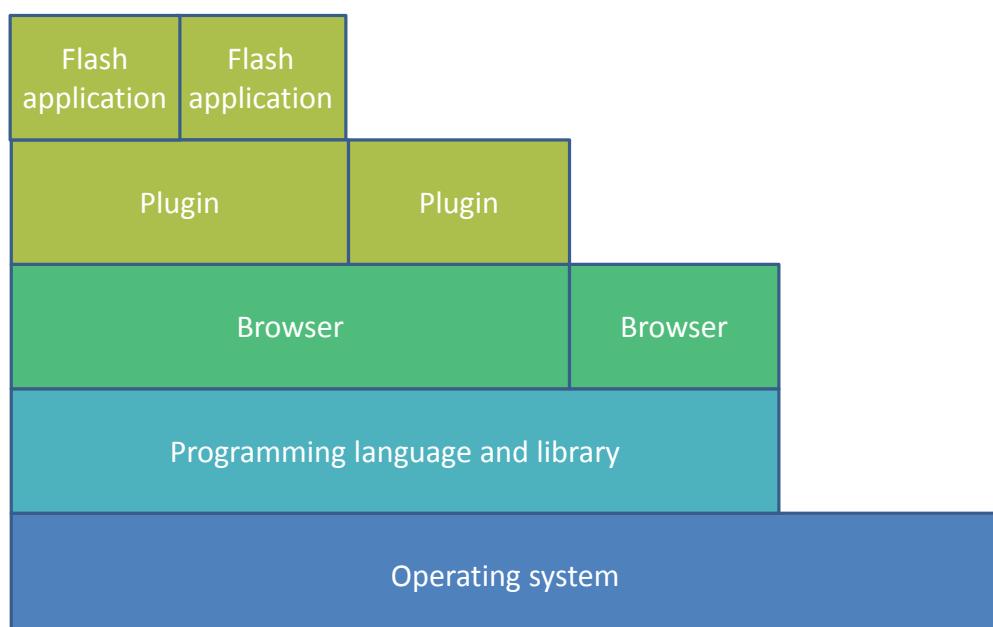
http://wiki.itsfactory.fi/index.php/Tampere_traffic_lights_API

API (Application programming interface)

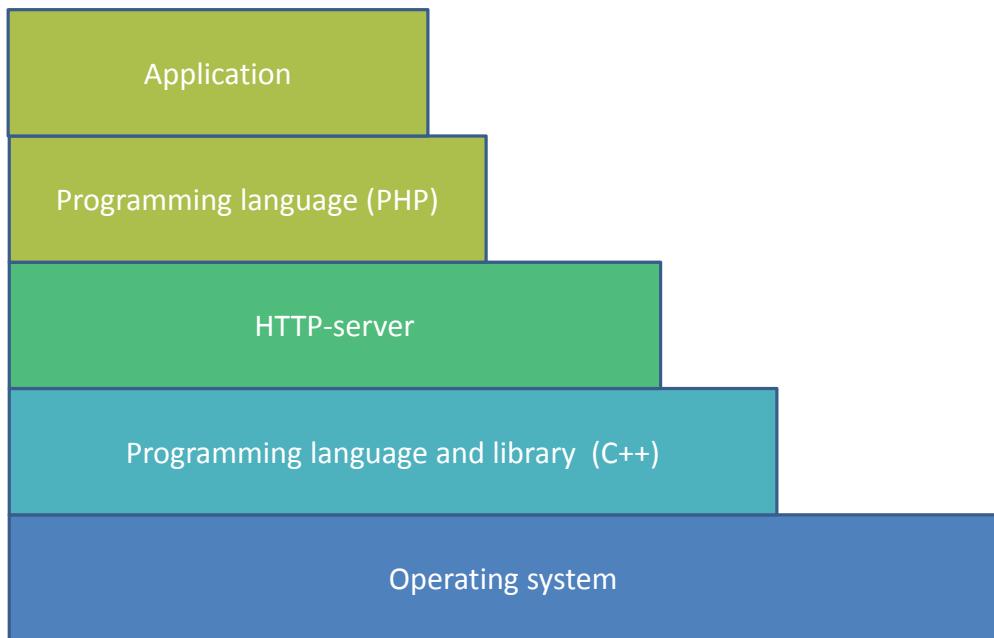
```

JSON Raw Data Headers
Save Copy Filter JSON
▼ help: "https://data.tampere.fi/data/api/3/action/help_show?name=resource_show"
  success: true
▼ result:
  cache_last_updated: null
  package_id: "a1638149-b2eb-4378-b259-de6d9c48774b"
  position_info: ""
  file_size: ""
  time_series_precision-fi: ""
  datastore_active: false
  time_series_precision: {}
  size: null
  id: "5568ba48-d083-464a-be5f-335842f8fa49"
  state: "active"
▼ archiver:
  is_broken_printable: "Downloaded OK"
  updated: "2019-11-19T02:15:47.591715"
  ▼ cache_filepath: "/opt/datacatalog/resource_cache/55/5568ba48-d083-464a-be5f-335842f8fa49/resource"
    last_success: "2019-11-19T02:15:47.591715"
    size: 12906
    is_broken: false
    failure_count: 0
  
```

APIs at business enablers



Server side could be like this



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IP (FI: aineeton omaisuus)

IP = Intellectual Property

- copyright = FI: tekijänoikeudet
- patents = FI: patentti
- trademarks = FI: tavaramerkki
- industrial designs = FI: teollinen muotoilu
- geographical indications = FI: maantieteellinen sijainti.

IPR = Intellectual Property Rights.

IPR

Software, or computer programs, is a complex asset. At the boundary between pure creations of the mind and technical inventions, multiple **Intellectual Property Rights** (IPR) can protect it. The intangible nature, diversity of uses, and the various related means available in order to create value with software also has an impact on such a complexity.

Intellectual Property (IP) is an essential tool to secure value generated by software.

Types of IPR	Registration required	Software components
Copyright	No, as protection is automatic, but complementary solutions are available such as i-DEPOT or public forges ¹ in order to further secure rights. In some countries registration is available and can fulfil essential purposes.	All the creative dimensions embedded in software are protected by copyright, provided they are original. Copyright is the historical and most frequently used means of protecting software. Copyrights protect the code as such, but also the user guides and the graphical elements such as icons.
Patent	Yes, under certain conditions ²	Patents are meant to protect the functional dimension of software, by providing potential ownership of new and inventive technical effects implemented by the program.
Trade marks	It is highly advisable to seek registration.	Protects an essential aspect of software, be it of a visual or textual nature (via either a logo or a word). A trade mark is an essential protection in order to differentiate assets on a given market.
Industrial Design	Registration is generally recommended, even though unregistered designs can be protected	Protects the graphical user interfaces under certain requirements.
Database rights	No	The outputs of the software process can be protected by <i>sui generis</i> database protection.
Confidential Information (trade secrets)	No	Specific and identified information can be protected through contractual arrangements.

WIPO (www.wipo.int)

WIPO = World Intellectual Property Organization

- WIPO is the global forum for intellectual property services, policy, information and cooperation. We are a self-funding agency of the United Nations, with 191 member states.
- Our mission is to lead the development of a balanced and effective international intellectual property (IP) system that enables innovation and creativity for the benefit of all.

WIPO tips for sw patenting

Modern society relies heavily on computer technology. Without software, a computer cannot operate. Software and hardware work in tandem in today's information society. So it is no wonder that intellectual property protection of software is crucial not only for the software industry, but for other businesses as well.

The intellectual property protection of computer software has been highly debated at the national and international level.

TIP 1: Do you really need a patent for your software-related invention? Think twice before preparing a patent application.

TIP 2: What do you wish to protect from your competitors? Identify the core part of your innovation.

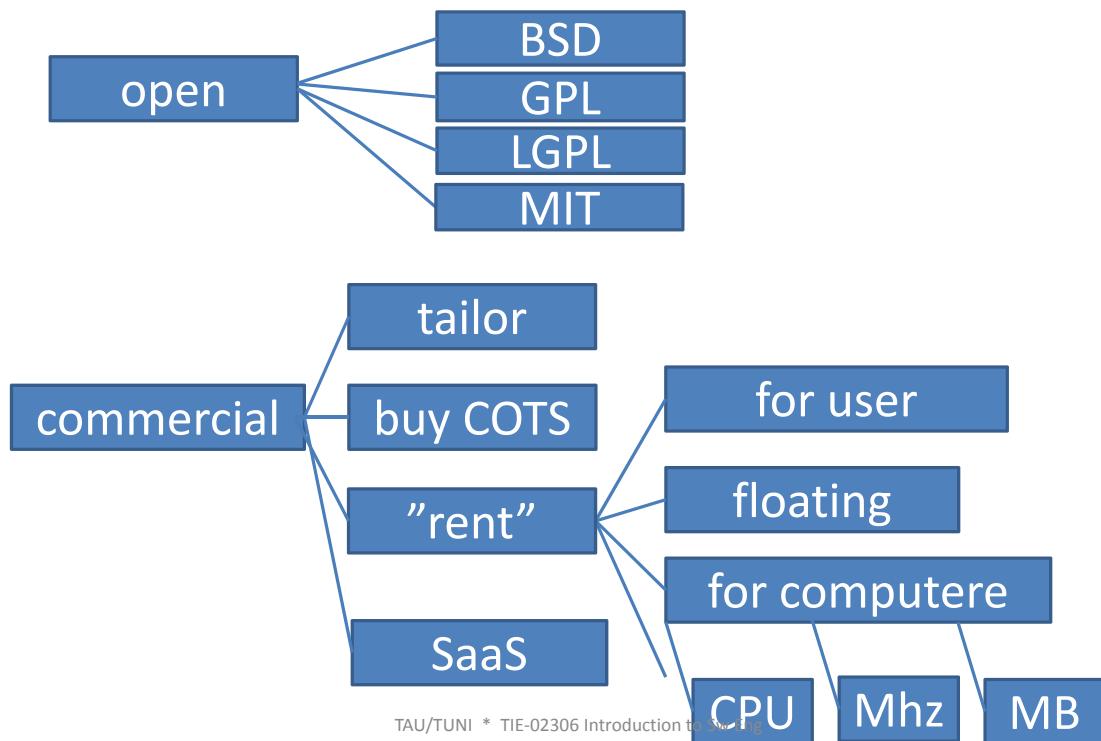
TIP 3: Is your innovation patentable? Not all types of software-related innovation can enjoy patent protection.

TIP 4: Do you need to protect your innovation abroad? Patentability requirements are not always the same in each country.

TIP 5: Consult an intellectual property expert who is familiar with the relevant national law and practice.

licenses

Software licenses, one viewpoint



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JUHTA - Julkisen hallinnon tietohallinnon neuvottelukunta

JHS 169 Avoimen lähdekoodin ohjelmien käyttö julkisessa hallinnossa

Versio: 1.1 5.10.2012

Julkaistu: 23.02.2009

Voimassaoloaika: Toistaiseksi

Taulukko 7. Ohjelmistojen jakelumallien ja lisenssien ominaisuuksia.

Lisensi	Vapaa levitys	Vapaa käyttö	Vapaa lähdekoodi	Normaali vastavuoroisuus	Vahva vastavuoroisuus
Suljettu ohjelmisto	-	-	-	-	-
Shareware	x	-	-	-	-
Freeware	x	x (voi sisältää rajoituksia)	-	-	-
BSD, MIT, Apache, ...	x	x	x	-	-
LGPL, MPL, EPL ...	x	x	x	x	-
GPL 2, GPL 3,CPL, ...	x	x	x	x	x

(vahva vastavuoroisuus = tarttuvuus)

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Press and Information

Court of Justice of the European Union

PRESS RELEASE No 94/12

Luxembourg, 3 July 2012

Judgment in Case C-128/11
UsedSoft GmbH v Oracle International Corp.

An author of software cannot oppose the resale of his 'used' licences allowing the use of his programs downloaded from the internet

The exclusive right of distribution of a copy of a computer program covered by such a licence is exhausted on its first sale

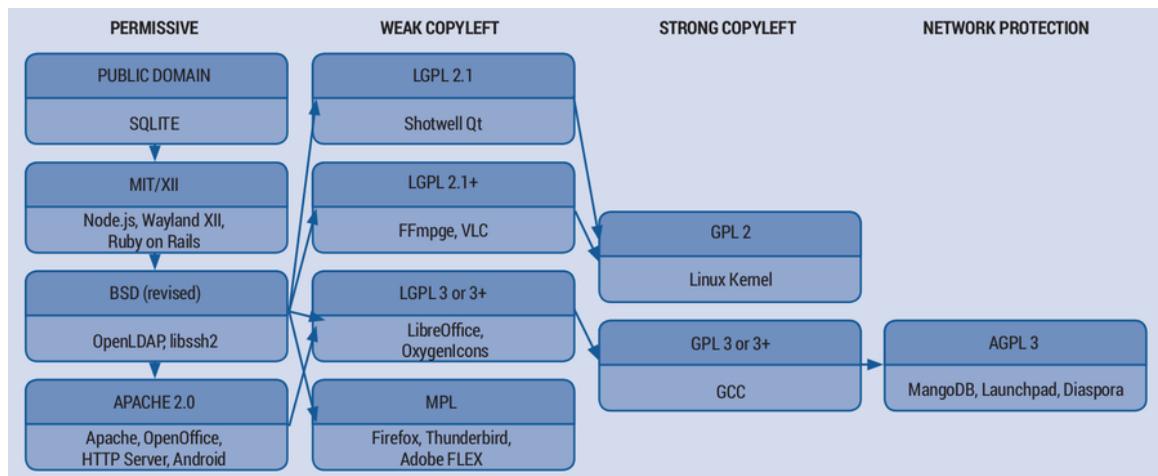
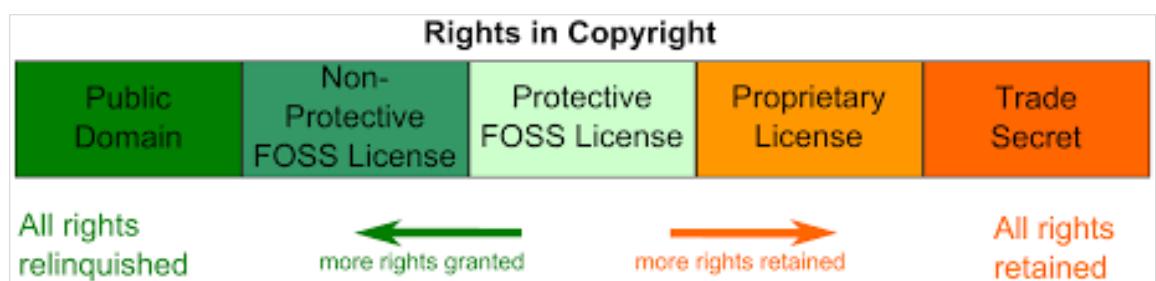
Oracle develops and distributes, in particular by downloading from the internet, computer programs functioning as 'client-server software'. The customer downloads a copy of the program directly onto his computer from Oracle's website. The user right for such a program, which is granted by a licence agreement, includes the right to store a copy of the program permanently on a server and to allow up to 25 users to access it by downloading it to the main memory of their work-station

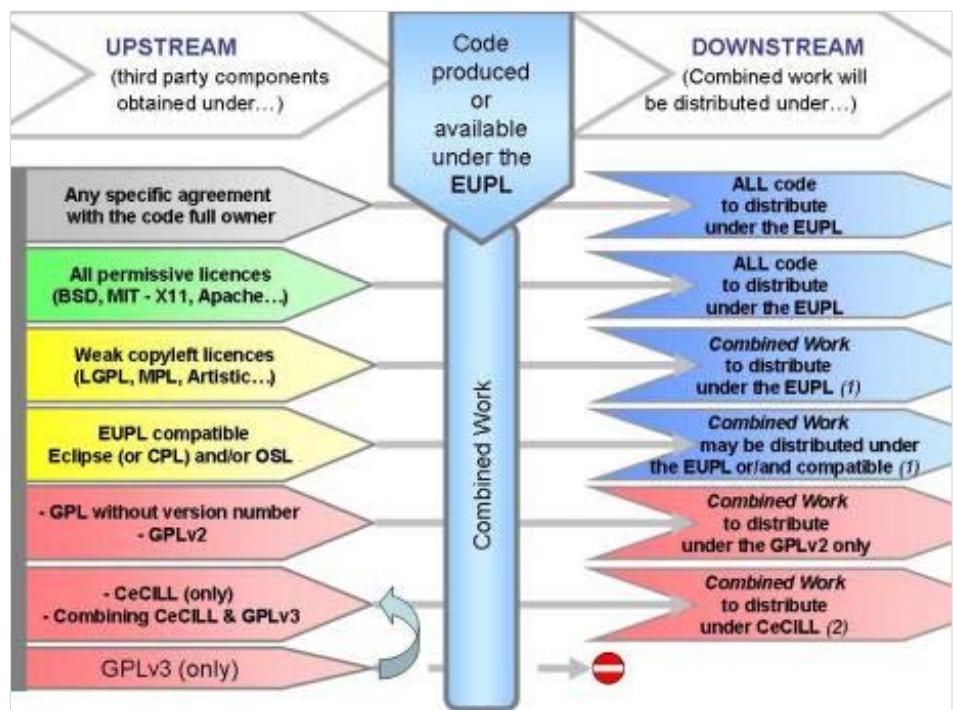
19.11.2019

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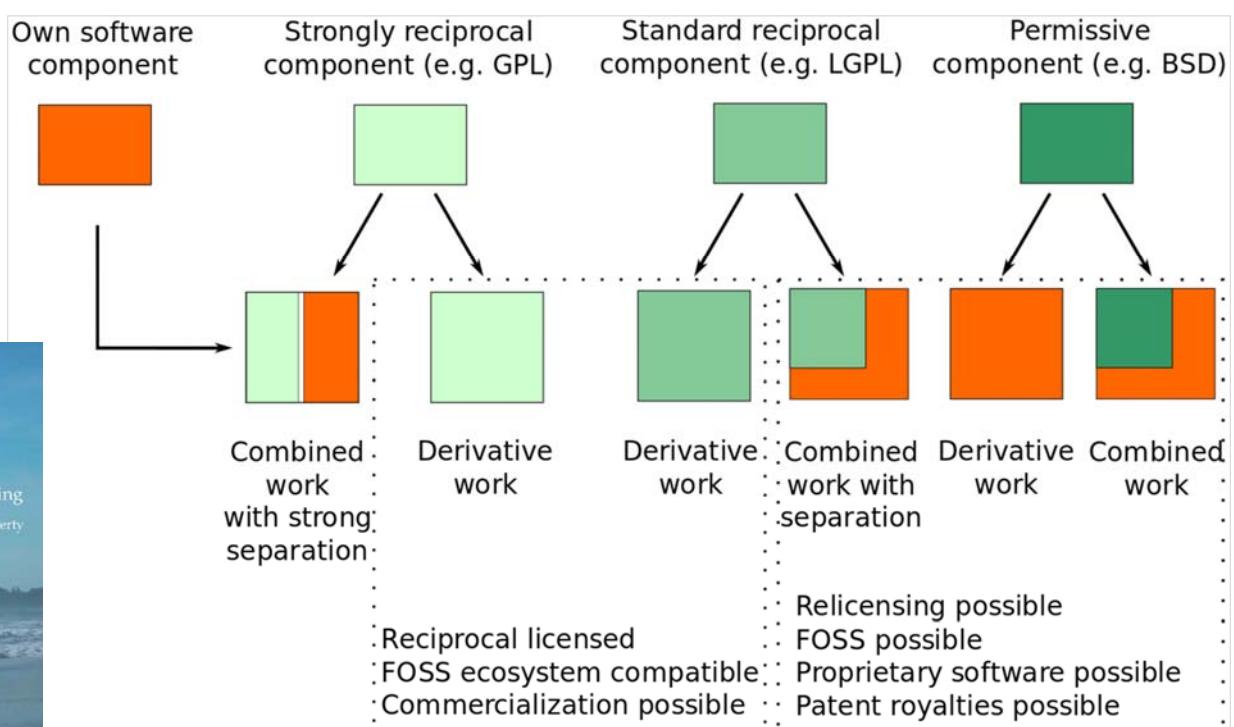
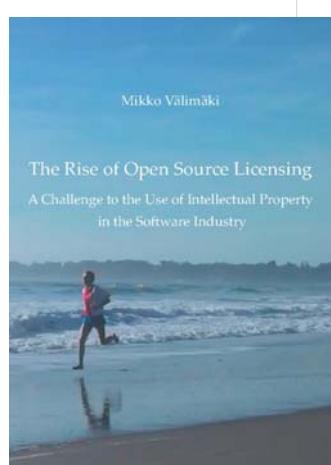
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Tampereen yliopisto
Tampere University





[<https://joinup.ec.europa.eu/collection/eupl/licence-compatibility>]



EUPL European Union public license

What is the EUPL?

EUPL is an acronym for "European Union Public Licence".

The first EUPL draft (v.0.1) went public in June 2005. A public debate was then organised by the European Commission (IDABC). The consultation of the developers and users community was very productive and has lead to many improvements of the draft licence; 10 out of 15 articles were modified. Based on the results of these modifications (a detailed report and the draft EUPL v.0.2), the European Commission elaborated a final version (v.1.0) that was officially approved on 9 January 2007, in three linguistic versions.

EUPL version 1.2 (2017)

New version of open source licence EUPL available



sharing IT solutions.

Compared to the previous versions, the updated EUPL v.1.2 has

1. broader coverage:

In addition to software, the new version also covers data, documents, technical specifications and standards, as well as software source codes.

2. wider compatibility:

DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE Version 2, December 2004

Copyright (C) 2004 Sam Hocevar <sam@hocevar.net>

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DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. You just DO WHAT THE FUCK YOU WANT TO.

The WTFPL has basically three parts:

1
DO WHAT THE FUCK YOU WANT TO PUBLIC LICENSE
Version 2, December 2004

2
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3
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0. You just DO WHAT THE FUCK YOU WANT TO.

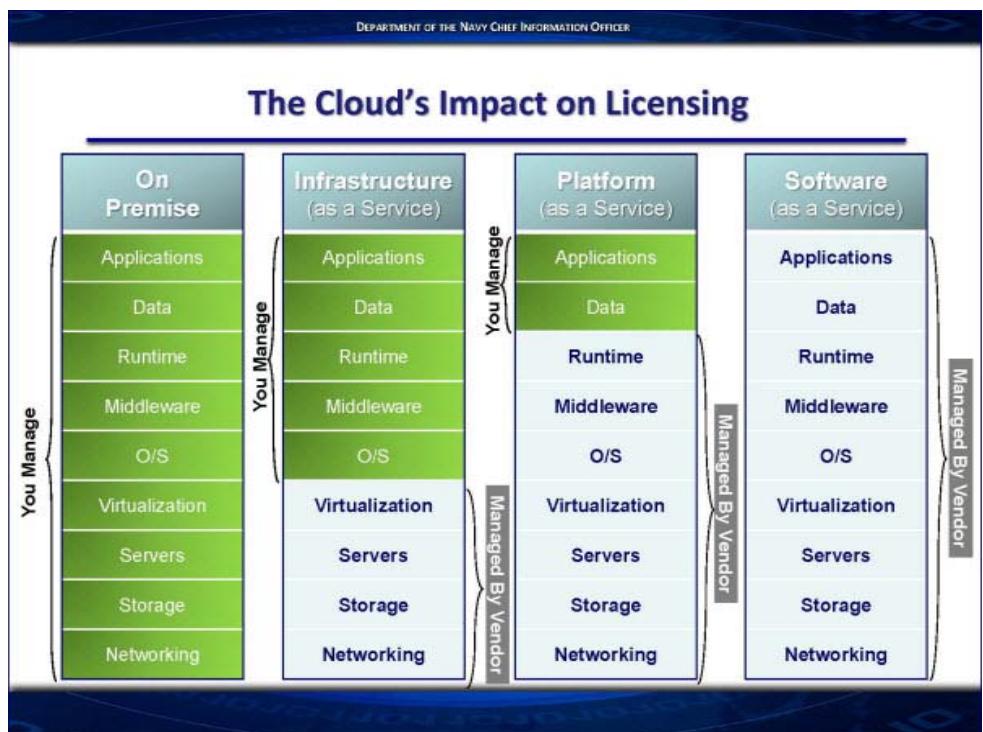
WTFPL, practical joke

Software cost models

[www.networkmanagementsoftware.com]

COST MODELS		OWNERSHIP TYPE		
LICENSE TYPE	PERPETUAL	SOFTWARE	APPLIANCE	SERVICE
	SUBSCRIPTION	SOFTWARE "PURCHASE"	APPLIANCE "PURCHASE"	N/A
	OBJECT	UNLIMITED SOFTWARE LICENSE	UNLIMITED APPLIANCE LICENSE	SAAS & UNLIMITED APPLIANCE LICENSE
		PER OBJECT SOFTWARE LICENSE	PER OBJECT APPLIANCE LICENSE	PER OBJECT SAAS & PER OBJECT APPLIANCE LICENSE

IaaS PaaS SaaS



[<https://www.doncio.navy.mil/chips/ArticleDetails.aspx?ID=5009>]

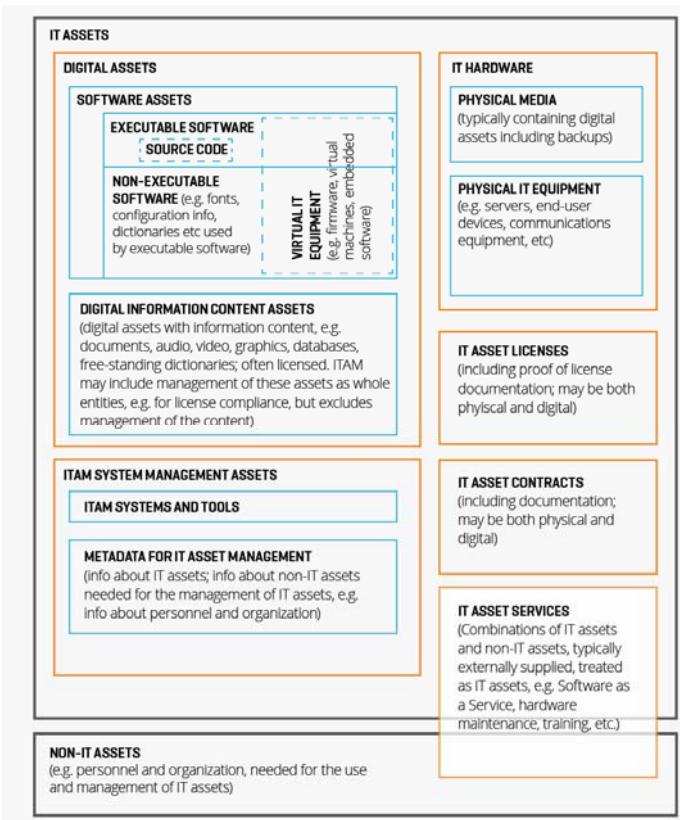
EULA

End User Licensing Agreements

The term “EULA” has multiple connotations for commercial software. Other names include: Purchaser Use Rights, Software License Agreement, and Software User Rights Agreement and there can be others as well.

EULAs include key clauses and general provisions. Key clauses include:

- license grant
- pricing
- warranty
- maintenance.



patents

software patents

The European Commission issued finally in 2002 a draft proposal for a directive on patentability of computer-implemented inventions.

The directive aimed at harmonizing the various national practices regarding patenting of computer programs, which had developed under the EPO practice throughout the years. The concern was that rules regarding patentability of computer-implemented inventions were ambiguous and lacked legal certainty.

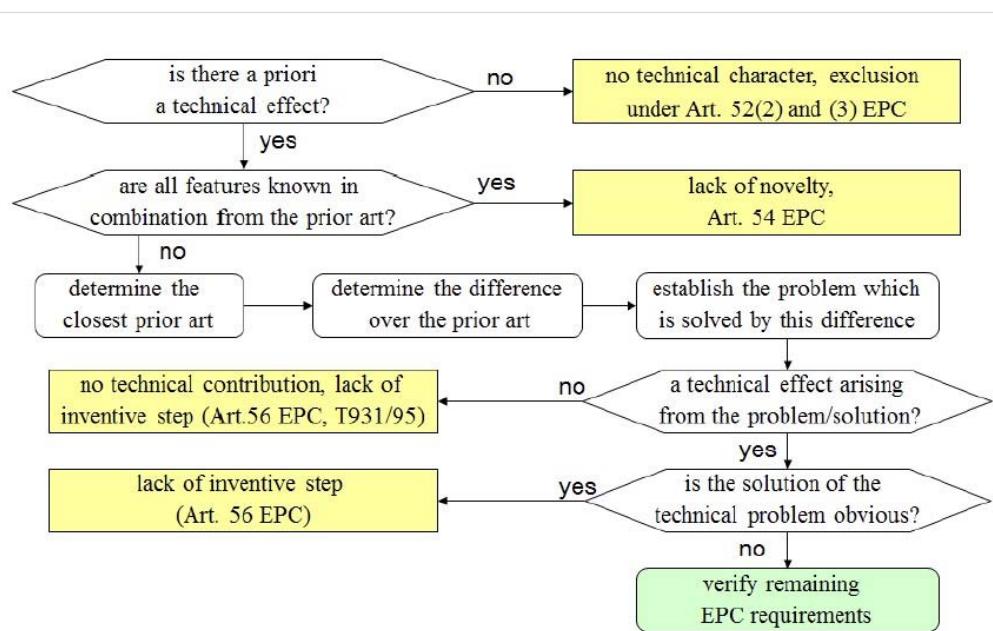
As to patenting of computer programs in Finland, the Patent Act of Finland provides that anyone who has made an invention *susceptible of industrial application* is entitled to an exclusive right to exploit the invention commercially. However, **software programs as such are not considered inventions within the meaning of §1 of the Finnish Patent Act. Computer program alone may not be patentable, but as part as of, for example, a device also program may be within the patent** eligible subject matter if the other preconditions for patentability are met. The restriction in the Patent Act of Finland regarding patentability of computer programs is based on the EPC under which software programs are not eligible for patent protection *as such*.



Anna Haapanen

FREE AND OPEN SOURCE
SOFTWARE LICENSING
AND THE MYSTERY OF LICENSOR'S PATENTS

EPO and CII



G. Herreman, Patentability of Computer-Implemented Inventions, European Patent Office (Discussion Workshop on Understanding the CII Directive 2005) at slide 24

EPO Index for Computer-Implemented Inventions, 2019

A computer-implemented invention (CII) is one which involves the use of a computer, computer network or other programmable apparatus, where one or more features are realised wholly or partly by means of a computer program.

The following collection of hyperlinks is provided in order to facilitate access to the sections of the Guidelines for Examination in the EPO which give instructions particularly useful for the search and examination of CIIs.



URL

<https://www.epo.org/law-practice/legal-texts/html/guidelines/ej.htm>

Location

Home > Law & practice > Legal texts > Guidelines for Examination

Guidelines for Examination

Index for Computer-Implemented Inventions

Index for Computer-Implemented Inventions

A computer-implemented invention (CII) is one which involves the use of a computer, computer network or other programmable apparatus, where one or more features are realised wholly or partly by means of a computer program.

The following collection of hyperlinks is provided in order to facilitate access to the sections of the Guidelines for Examination in the EPO which give instructions particularly useful for the search and examination of CIIs.

It is noted that this collection is not a separate publication about CIIs. Instead, following a hyperlink will lead to the section of the most recent and applicable version of the Guidelines which has the stated number and title.

Patentable inventions

G-I, 1 Patentability requirements

G-I, 2 Further requirements of an invention

G-II, 1 General remarks

G-II, 2 Examination practice

G-II, 3.6 Programs for computers (*updated in GL 2018*)

- G-II, 3.6.1 Examples of further technical effects (*introduced in GL 2018*)

- G-II, 3.6.2 Information modelling, activity of programming and programming languages (*introduced in GL 2018*)

- G-II, 3.6.3 Data retrieval, formats and structures (*introduced in GL 2018*).

Novelty and inventive step

G-VII, 5.4 Claims comprising technical and non-technical features (*updated in GL 2015*)

- G-VII, 5.4.1 Formulation of the objective technical problem (*updated in GL 2015*)

- G-VII, 5.4.2 Examples of applying the steps listed in G-VII, 5.4 (*introduced in GL 2016, with its sub-sections*)

- G-VII, 5.4.2.1 Example 1

- G-VII, 5.4.2.2 Example 2

- G-VII, 5.4.2.3 Example 3

- G-VII, 5.4.2.4 Example 4.

EPO Index for Computer-Implemented Inventions, 3

Features related to the list of Art. 52(2) and technical contribution

G-II, 3.3 Mathematical methods (*updated in GL 2018*)

– G-II, 3.3.1 Artificial intelligence and machine learning (*introduced in GL 2018*)

– G-II, 3.3.2 Simulation, design or modelling (*introduced in GL 2018*)

G-II, 3.4 Aesthetic creations

G-II, 3.5 Schemes, rules and methods for performing mental acts, playing games or doing business (*updated in GL 2018*)

– G-II, 3.5.1 Schemes, rules and methods for performing mental acts (*introduced in GL 2018*)

– G-II, 3.5.2 Schemes, rules and methods for playing games (*introduced in GL 2018*)

– G-II, 3.5.3 Schemes, rules and methods for doing business (*introduced in GL 2018*)

G-II, 3.6 Programs for computers (*updated in GL 2018*)

– G-II, 3.6.1 Examples of further technical effects (*introduced in GL 2018*)

– G-II, 3.6.2 Information modelling, activity of programming and programming languages (*introduced in GL 2018*)

– G-II, 3.6.3 Data retrieval, formats and structures (*introduced in GL 2018*)

G-II, 3.7 Presentations of information (*updated in GL 2018*)

– G-II, 3.7.1 User interfaces (*updated in GL 2017*).

EPO Index for Computer-Implemented Inventions, 4

Search practice

B-VIII, 2.2 Subject-matter excluded from patentability under Art. 52(2) and (3) (*introduced in GL 2015*)

B-VIII, 2.2.1 Computer-implemented business methods (*updated in GL 2015*).

EPO Index for Computer-Implemented Inventions, 5

Requirements of Art. 84

F-IV, 3.9 Claims directed to computer-implemented inventions (*introduced in GL 2016, with its sub-sections*)

- F-IV, 3.9.1 Cases where all method steps can be fully implemented by generic data processing means
 - F-IV, 3.9.2 Cases where method steps require specific data processing means and/or require additional technical devices as essential features
- F-IV, 4.13 Interpretation of expressions such as "Apparatus for ...", "Method for ..." (see par. 3).

EPO Index for Computer-Implemented Inventions, 6

Requirements of Art. 83

F-III, 1 Sufficiency of disclosure (see par. 4)

Formal requirements for the description part

F-II, 4.12 Computer programs.

Copyright vs. patent

Copyright law and patent law provide different types of protection. Copyright protection extends only to expressions, and not to ideas, procedures, methods of operation or mathematical concepts as such, whereas a patent is an exclusive right granted for an invention, which is a product or a process that provides a new way of doing something, or offers a new technical solution to a problem.

Copyright protection is formality-free in countries party to the Berne Convention for the Protection of Literary and Artistic Works (the Berne Convention), which means that protection does not depend on compliance with any formalities such as registration or deposit of copies.

A patent is generally granted after completing an examination procedure by a government agency. Copyright protection of computer software is established in most countries and harmonized by international treaties to that effect.

The law relating to the patentability of software is still not harmonized internationally, but some countries have embraced the patentability of computer software and others have adopted approaches that recognize inventions assisted by computer software.

[www.wipo.int]

contracts

IT2018 terms and conditions for ICT-projects

www.it-ehdot.fi/tutustu-ehtoihin

IT2018

ETUSIVU

TUTUSTU EHTOIHN

AJANKOHTAISTA

FAQ

OSTA EHDOT 

There are 9 contract model templates and 10 appendixes in English, too.

Tutustu IT-ehtoihin

IT2018-ehdot sisältävät 10 sopimusehtoliitteitä ja 9 sopimusmallia. Alla olevista linkeistä voit esikatsella sopimusehtoliitteitä. Linkeistä voit myös ladata itsellesi word-muotoiset sopimusmallit, joita voit käyttää, kun sovellet IT2018-ehtoja liiketoiminnassasi.

IT2018-Sopimusehtoliitteet (pdf), esikatseluversiot

IT2018 YSE - yleiset sopimusehdot
IT2018 EAP - Erityisehtoja konsultointi- ja muista asiantuntijapalveluista
IT2018 EHK - Erityisehtoja henkilötietojen käsittelystä
IT2018 EJT - Erityisehtoja tietojärjestelmien ja asiakaskohtaisten ohjelmistojen toimituksesta
IT2018 EKT - Erityisehtoja ohjelmistojen toimituksista ketterillä menetelmillä
IT2018 ELH - Erityisehtoja laitteiden huoltopalveluista
IT2018 ELT - Erityisehtoja laitetoimituksista
IT2018 EOY - Erityisehtoja ohjelmistojen ylläpitopalveluista
IT2018 ETP - Erityisehtoja tietoverkon valityksellä toimitettavista palveluista (pilvipalvelu)
IT2018 EVT - Erityisehtoja valmisohjelmistojen toimituksista

Ladattavat IT2018-sopimusmallit (docx)

Henkilötietojen käsittelysopimus IT2018

Englanninkieliset IT2018-sopimusehtoliitteet (pdf), esikatseluversiot

IT2018 YSE - General terms and conditions
IT2018 EAP - Special terms and conditions for consulting and other professional services
IT2018 EHK - Special terms and conditions for the processing of personal data
IT2018 EJT - Special terms and conditions for deliveries of data systems and customised software
IT2018 EKT - Special terms and conditions for deliveries of software using agile methods
IT2018 ELH - Special terms and conditions for equipment maintenance
IT2018 ELT - Special terms and conditions for deliveries of equipment
IT2018 EOY - Special terms and conditions for software maintenance
IT2018 ETP - Special terms and conditions for services delivered via data network (cloud service)
IT2018 EVT - Special terms and conditions for deliveries of standard software

IT2018 contract appendix English templates, preview versions

[<http://www.it-ehdot.fi/tutustu-ehtoihin>]

Englanninkieliset IT2018-sopimusehtoliitteet (pdf), esikatseluversiot

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Downloadable English contract templates

[<http://www.it-ehdot.fi/tutustu-ehtoihin>]

Ladattavat englanninkieliset IT2018- sopimusmallit (docx)

- Agreement for the processing of personal data IT2018
- Delivery agreement for software using agile methods IT2018
- Consulting and other professional services agreement IT2018
- Equipment maintenance agreement IT2018
- Software maintenance agreement IT2018
- Service level description on measuring usability of the service IT2018
- Non-disclosure agreement IT2018
- Agreement on services delivered via data network IT2018
- Delivery agreement IT2018

Sometimes an agreement may mean a lot of extra work...

19.11.2019

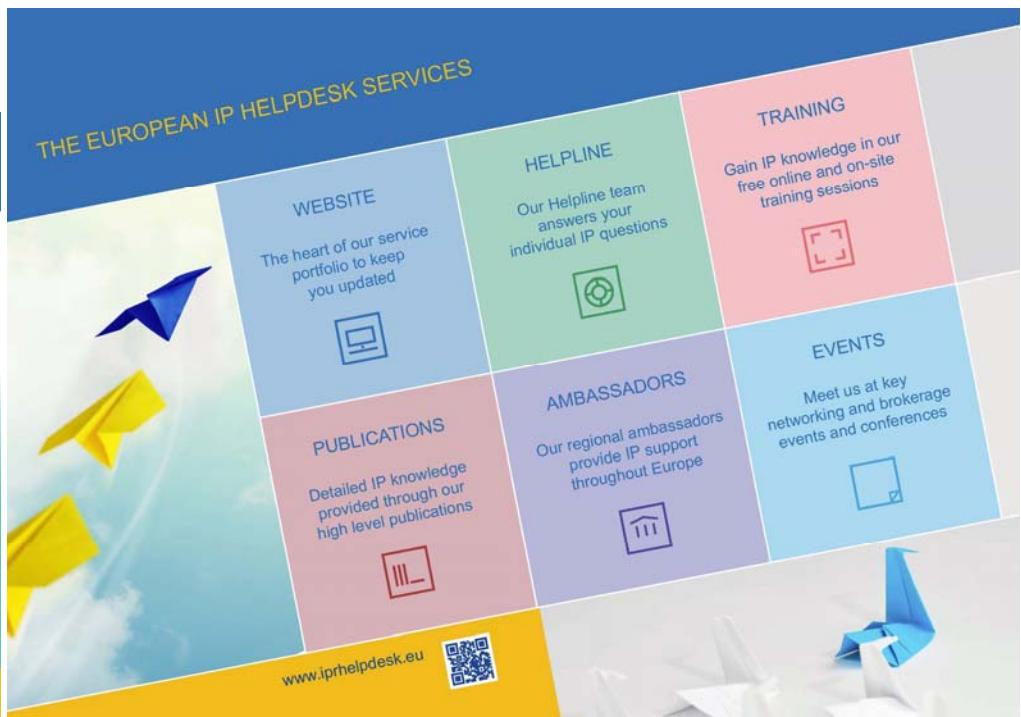
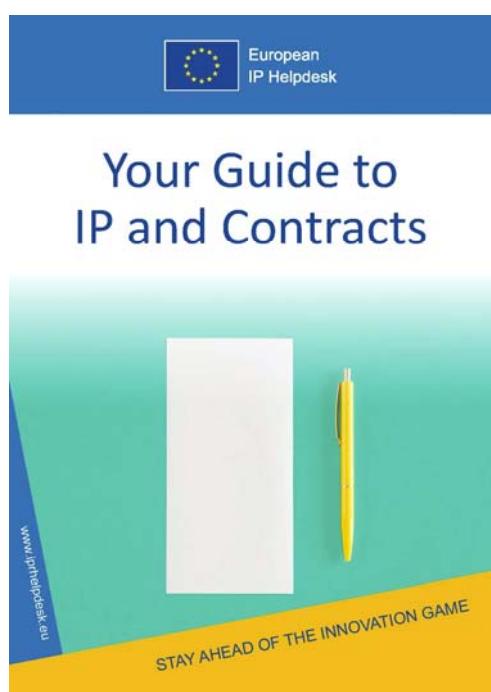
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<https://www.contractstandards.com/public/contracts/software-development-agreement>

<https://ict-sopimukset.fi/> (commercial, English templates, by TIEKE www.tieke.fi)



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<http://www.it-ehdot.fi/tutustu-ehtoihin>

IT2018-Sopimusehtoliitteet (pdf), esikatseluversiot

IT2018 YSE - yleiset sopimusehdot
 IT2018 EAP - Eriityisehtoja konsultointi- ja muista asiantuntijapalveluista
 IT2018 EHK - Eriityisehtoja henkilötietojen käsittelystä
 IT2018 EJT - Eriityisehtoja tietojärjestelmien ja asiakaskohtaisten ohjelmistojen toimituksista
 IT2018 EKT - Eriityisehtoja ohjelmistojen toimituksista ketterillä menetelmillä
 IT2018 ELH - Eriityisehtoja laitteiden huoltopalveluista
 IT2018 ELT - Eriityisehtoja laitetoimituksista
 IT2018 EOY - Eriityisehtoja ohjelmistojen ylläpitopalveluista
 IT2018 ETP - Eriityisehtoja tietoverkon välttyksellä toimitettavista palveluista (pilvipalvelu)
 IT2018 EVT - Eriityisehtoja valmisojelmistojen toimituksista

Ladattavat IT2018-sopimusmallit (docx)

Henkilötietojen käsittelysopimus IT2018
 Ketterien menetelmien toimitussopimus IT2018
 Konsultointi- ja muita asiantuntijapalveluita koskeva sopimus IT2018
 Laitteiden huoltopalvelusopimus IT2018
 Ohjelmistojen ylläpitosopimus IT2018
 Palvelutasokuvaus palvelun käytettävyyden mittauksesta IT2018
 Salassapitosopimus IT2018
 Tietoverkon välttyksellä toimitettavia palveluja koskeva sopimus IT2018
 Toimitussopimus IT2018

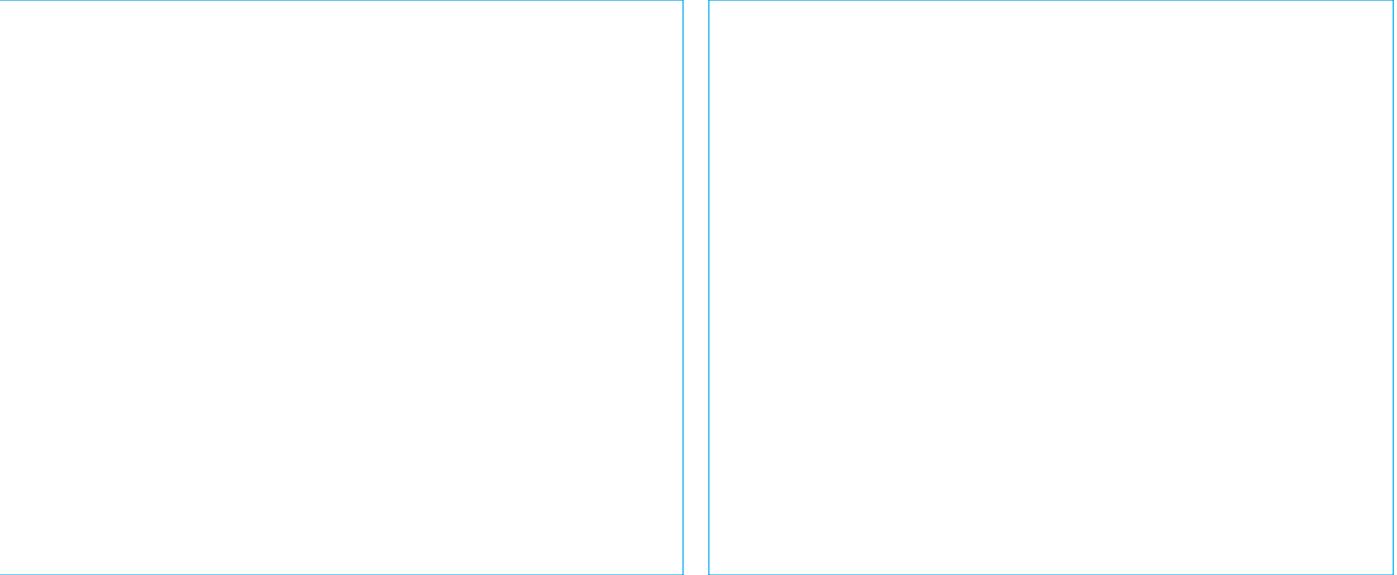
IT 2018

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The screenshot shows a web browser window with multiple tabs open. The active tab displays a news article from The Independent. The headline reads: "Amazon 1p glitch: Software error sees hundreds of items sold for fractions of their value". Below the headline, a sub-headline states: "Retailers say they could be bankrupted by the fault in software that claims to 'auto-optimise' listings". The author's name, Adam Withnall, and the publication date, Sunday 14 December 2014 14:05, are visible. There are 32 comments and social sharing links for Facebook, Twitter, and Email. The main content area features a photograph of a warehouse filled with cardboard boxes.

Friday 12.12.2014 at 17-18
local time, automatic algorithm
"ran mad" and many products
got the price of one (1) pence.

**So, who is guilty, who pays
the losses ? Developer ?**

This block contains a detailed view of the news article from The Independent. It includes the author's bio (Rupert Neate), the publication date (Sun 14 Dec 2014 18:11 GMT), and the number of comments (2,783). The main text discusses the impact on small businesses due to a RepriceExpress software bug. A large photograph shows a warehouse interior with many stacked boxes. Below the photo, a caption reads: "There were Christmas shopping bargains galore on Amazon's website over the weekend ... for about an hour. Because of a technical glitch, the prices of thousands of items crashed to 1p - giving eagle-eyed customers a pre-Christmas treat while leaving scores of small family-owned businesses nursing heavy losses, with some warning they could enter the new year facing closure." A note at the bottom states: "From 7-8pm on Friday, software used by third-party sellers to ensure their products are the cheapest on the market went haywire and reduced prices to 1p."

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Non-competition agreement

Non-competition agreements

A non-competition agreement is an agreement that restricts the employee's right to work for another company acting in the same field of business with his or her employer. A non-competition agreement can also limit the employee's right to have his or her own competing business. **A non-competition agreement can only be made if there is a weighty reason for its need**, arising from the employer's business or the employment relationship.

[www.tek.fi]

Home > Services > Legal consulting > Legal Data Bank > Competing activities and non-competition agreements

SERVICES**CAREER SERVICES****HELP IN CAREER TRANSITIONS****LEGAL CONSULTING**> **LEGAL DATA BANK****PROFESSIONAL LIABILITY AND LEGAL EXPENSES INSURANCE****SALARIES****WHERE ARE YOU IN YOUR CAREER?****WORKING LIFE IN FINLAND****ENTREPRENEURS**[Share this page](#)

COMPETING ACTIVITIES AND NON-COMPETITION AGREEMENTS

Information about non-competition agreements and competing activities.

Updated 18.4.2018

student members of TEK can get e.g. legal advice

[<https://www.tek.fi/en/services/legal-consulting/legal-data-bank/competing-activities-and-non-competition-agreements>]

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GDPR

GDPR = General Data Protection Regulation



The screenshot shows the homepage of GDPR.EU. At the top, there's a navigation bar with links for Home, Checklist, FAQ, GDPR, and News & Updates. There are also social media links for Facebook and Twitter, and a search bar. The main banner features a blue-toned image of a hand holding a pen over a document, with the text "What is a GDPR data processing agreement?" overlaid.

Rule of thumb: if you need to handle personal ID (social security number) in your application, you are in trouble.

Virtually every business relies on third parties to process personal data. Whether it's an email client, a cloud storage service, or website analytics software, you must have a data processing agreement with each of these services to achieve GDPR compliance.

The EU General Data Protection Regulation takes a more serious approach to contracts than previous EU data regulations did. If your organization is [subject to the GDPR](#), you must have a written data processing agreement in place with all your data processors. Yes, a data processing agreement is more annoying paperwork. But it's also one of the most basic steps of GDPR compliance and necessary to avoid GDPR fines.

This guide serves as an introduction to data processing agreements — what they are, why they're important, who they're for, and what they need to say. You can also follow the link to find a [GDPR data processing agreement template](#) that you can download, customize, and use for your company.

Related articles

- [Data Processing Agreement \(Template\)](#)
- [What is considered personal data under the EU GDPR?](#)
- [Writing a GDPR-compliant privacy notice \(template included\)](#)

Forms and Templates

- [Data Processing Agreement](#)
- [Right to Erasure Request Form](#)
- [Privacy Policy](#)

[<https://gdpr.eu/what-is-data-processing-agreement/>]

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GOOGLE ▾ POLICY ▾ US & WORLD ▾

Google fined €50 million for GDPR violation in France

The CNIL said Google's data consent policies aren't easily accessible or transparent

By Jon Porter | @JonPorty | Jan 21, 2019, 11:16am EST

f t e SHARE

France: Google fined €50 million (2019)

Back in January, the French Data Protection Authority (CNIL) fined Google €50 million **for a lack of transparency, inadequate information and a lack of valid consent** regarding the personalisation of adverts on its platform. The level of the CNIL's fine was determined by the "massive and intrusive" nature of Google's data processing, as well as the key nature of the relevant GDPR provisions.

GDPR issues 2019

Sweden: first fine issued to local school

On 20 August 2019 the Swedish DPA issued the country's first GDPR fine to a local high-school for its use of facial recognition technology. The authority held that the technology, which was used to monitor student attendance, was excessively intrusive, while the permission obtained from students did not constitute GDPR-required consent because it was not voluntarily given and freely chosen. What is more, the school had failed to conduct the necessary documented data protection impact assessment.

United Kingdom: ICO announces biggest fines to date

To reinforce this point, the ICO released a second statement the following day, announcing that it would also be fining hospitality company Marriott International £99 million (approximately €110.4 million) for similar **security failures**. In this case, an ICO investigation revealed that the **personal data of 30 million Marriott International guests** – including their names, post and email addresses, phone numbers, passport numbers, dates of birth, genders and encrypted payment card numbers – **had been compromised**.

Is JPEG open ?

Forgent JPEG Related Patent

- PUBPAT filed a formal request with the United States Patent and Trademark Office in November 2005 to revoke the patent Forgent Networks Inc. (Nasdaq: FORG) is widely asserting against the Joint Photographic Experts Group (JPEG) international standard for the electronic sharing of photo-quality images. In its filing, **PUBPAT submitted previously unseen prior art** showing that the patent, which was issued in 1987 to Forgent's subsidiary Compression Labs Inc., was not new and, as such, should be revoked. The PTO granted PUBPAT's request in February 2006 and rejected the broadest claims of the patent in May 2006. **In November 2006, Forgent abandoned all assertion of the patent.**

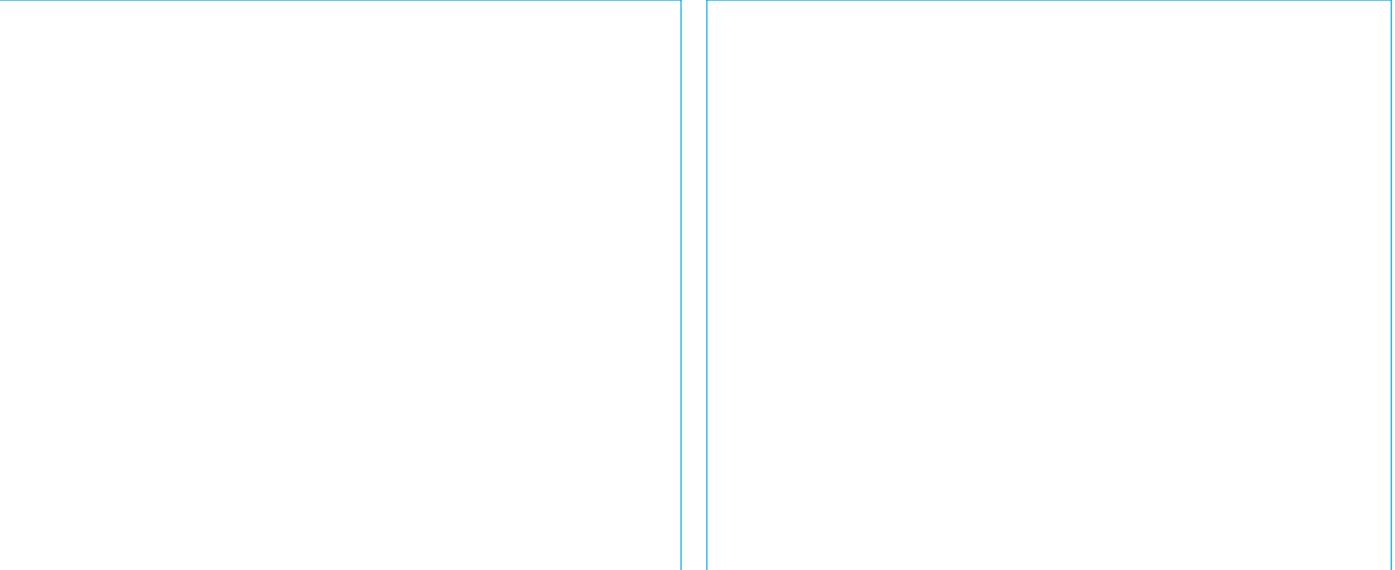
[<http://www.pubpat.org/forgentjpeg.htm>]

Is JPEG open...

www.openjpeg.org

OpenJPEG is an open-source JPEG 2000 codec written in C language. It has been developed in order to promote the use of [JPEG 2000](#), a still-image compression standard from the Joint Photographic Experts Group ([JPEG](#)). Since May 2015, it is officially recognized by ISO/IEC and ITU-T as a [JPEG 2000 Reference Software](#).

"Vendor lock", buying software from single source (who will not let anybody else see the source code, nor does open APIs for other companies).



Google wins six-year legal battle with Oracle over Android code copyright

The Guardian Thursday 26 May 2016 21.46 BST

Developers expected to welcome ruling that finds Google's employment of Java code in its Android operating system was fair use

Google has won a six-year court case brought by software firm Oracle, which claimed Google had infringed its copyright by using 11,500 lines of Java code in its Android operating system.

The jury ruled that Google's use of 37 Java APIs (application programming interfaces) was fair use. The news will be welcomed by developers, who typically rely on free access to APIs to develop third-party services.

Oracle had contested that Google's use of its proprietary Java code exceeded fair use, and was seeking damages of up to \$9bn.

Let's look about one license in detail; Adobe <https://www.adobe.com/legal/terms.html>

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- 3.4 Backup Copy. You may make **one backup copy** of the Software, provided your backup copy is not installed or used other than for archival purposes. You may not transfer the rights to a backup copy unless you transfer all rights in the Software as provided under Section 5.

- 4. Obligations and Restrictions.
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Highlights - What to remember

- There are many kind of software licenses, if you make commercial software, be careful what kind of license the components have (e.g. must you publish source code)
- if customer wants you to use personal ID (social security number) as client ID, suggest customer not to do such, it will be complex because of GDPR
- Big Data and IoT needs more and more real experts in near future
- there is a huge amount of Open Data available (APIs)
- there are many contract templates available (e.g. IT2018).

